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***DRAFT***

***Rocky Flats Legacy Management  
Agreement***

# *DRAFT ROCKY FLATS LEGACY MANAGEMENT AGREEMENT*

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*DRAFT ROCKY FLATS LEGACY MANAGEMENT AGREEMENT*

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

## REGION 8

and

THE STATE OF COLORADO

IN THE MATTER OF:

# FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

UNITED STATES DEPARTMENT  
OF ENERGY

# ROCKY FLATS SITE

CERCLA 8-96-21  
RCRA(3008(h)) 8-96-01

STATE OF COLORADO  
DOCKET # 96-07-19-01

# ROCKY FLATS LEGACY MANAGEMENT AGREEMENT

## PART 1 PARTIES AND JURISDICTION

1. The Parties to this Agreement are the United States Environmental Protection Agency, Region 8 (EPA), the Colorado Department of Public Health and Environment (CDPHE or “State”), and the United States Department of Energy (DOE).

2. EPA enters this Agreement pursuant to sections 104 and 120(e) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §§ 9604, and 9620(e), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), Pub. L. 99-499 (hereinafter jointly referred to as CERCLA); sections 6001, 3008(h), and 3004(u) and (v) of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §§ 6961, 6928(h), 6924(u) and (v), as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA), Pub. L. 98-616 and the Federal Facility Compliance Act of 1992, Pub. L. No. 102-386 (hereinafter jointly referred to as RCRA); and Executive Orders 12088 and 12580.

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3. CDPHE enters into this Agreement pursuant to sections 104(d), 120(f), 121, and 310 of CERCLA, 42 U.S.C. § 9604(d), 9620, and 9810; section 3006 of RCRA, 42 U.S.C. § 6926; and the Colorado Hazardous Waste Act ("CHWA"), section 25-15-301 et seq. C.R.S. Requirements of this Agreement that relate to RCRA and CHWA are a Compliance Order on Consent issued by CDPHE pursuant to section 25-15-308(2), C.R.S.

4. DOE enters into this Agreement pursuant to section 120(e) of CERCLA, 42 U.S.C. § 9620 (e); §§ 6001, 3008(h), and 3004(u) and (v) of RCRA, 42 U.S.C. §§ 6961, 6921(h), 6928(u) and (v); Executive Orders 12088 and 12580; and the Atomic Energy Act of 1954, as amended (AEA), 42 U.S.C. § 2011 et seq.

5. The Parties agree that they are bound by this Agreement and that the requirements of this Agreement may be enforced against DOE pursuant to Part 8 of this Agreement or as otherwise provided by law. DOE consents to and will not contest EPA or State jurisdiction for the purposes of executing and enforcing this Agreement or its requirements.

6. The activities undertaken pursuant to this Agreement are regulated under CERCLA, RCRA and CHWA, and other applicable State environmental law, and shall be implemented in accordance with all applicable statutes, regulations, and Executive Orders. If any new or amended statute or regulation pertinent to this Agreement becomes effective subsequent to the date of execution of this Agreement, any modifications to this Agreement made necessary by such changes in the law shall be incorporated by modification into this Agreement, and other modifications related to such changes in the law shall be subject to further negotiations. The Parties shall conduct periodic review of all applicable new and revised statutes and regulations and written policy and guidance in connection with the periodic review provided for in Part 11. Any reference in this Agreement to a statute shall include that statute's implementing regulations.

## **PART 2      STATEMENT OF PURPOSE**

7. The purpose of this Agreement is to establish the regulatory framework for implementing the final response action selected and approved in the final CAD/ROD, and ensuring that it remains protective of human health and the environment. This Agreement is a single document that is both a CERCLA § 120 Interagency Agreement and a CHWA corrective action order; the requirements of this Agreement are enforceable by the Parties. This Agreement modifies and supersedes the Rocky Flats Cleanup Agreement. Specific objectives of this Agreement are as follows:

- a) Coordinate all of DOE's post-CAD/ROD obligations under CERCLA, RCRA, and CHWA in a single agreement to streamline compliance with these three statutes;
- b) Specify the performance standards identified in the final CAD/ROD;
- c) Specify the requirements for legacy management of the Central OU, including monitoring, operation and maintenance of the final response action selected and approved in the final CAD/ROD;
- d) Specify processes for review, implementation, monitoring, modification, creation, and termination, as appropriate, of response actions;

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e) Serve as the enforceable mechanism for post-closure requirements in lieu of a post-closure permit under CHWA; and

f) Provide for public information and involvement.

8. The provisions of this Agreement reflect not only the agreement of the Parties, but also the unique circumstances of Rocky Flats. The Parties agree that, consequently, inclusion of a particular provision in this Agreement does not establish a precedent for other federal facilities.

## **PART 3      DEFINITIONS**

9. If there is an inconsistency between CERCLA, RCRA, and CHWA with respect to the following definitions, the Agreement's definition controls. If there is no definition in this Agreement, but there is an inconsistency between the statutory definitions for CERCLA, RCRA, and CHWA, including their related regulatory definitions, the definitions in CERCLA and the NCP shall control. The following definitions are used for the purposes of this Agreement:

a) Administrative Record shall refer to the compilation of documents which establishes the basis of all response action decisions for each OU at the Site, as required by section 113(k)(1) of CERCLA.

b) Rocky Flats Legacy Management Agreement ("RFLMA"), and "this Agreement" mean the body of this Agreement (pages 1 - 23 -) and all Attachments, modifications, approved documents, other approvals or determinations by EPA, the State, or both, as appropriate, final written resolution of any dispute, amendments to this document, and the Final CAD/ROD. Upon final approval, all requirements in such Attachments, Amendments, approved documents, State or EPA approvals, work description documents, and amendments are deemed incorporated into this Agreement. Approved documents, other approvals, and final resolutions of dispute need not be physically attached to this document. Appendices to this Agreement are related, but separate documents that are appended for convenience only. Appendices do not constitute parts of this Agreement.

c) Approval, in relation to documents, means CDPHE and/or EPA formal consent that a document delivered for review pursuant to this Agreement contains the requisite information at the appropriate level of detail to comply with this Agreement.

d) ARAR stands for "applicable or relevant and appropriate requirement," as specified in CERCLA § 121 and the NCP.

e) Atomic Energy Act or AEA means the Atomic Energy Act of 1954, as amended, 42 U.S.C. § 2011 et seq.

f) Central Operable Unit or Central OU means the portion of Rocky Flats which was determined in the final CAD/ROD to require additional response actions. Generally speaking, the Central OU consists of the former industrialized area of Rocky Flats, the Original and Present Landfills, and land east of the former 903 Pad that contains relatively higher levels of residual contamination.

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- 1 g) CERCLA means the Comprehensive Environmental Response, Compensation, and Liability Act,  
2 42 U.S.C. § 9601 et seq., as amended by the Superfund Amendments and Reauthorization Act of  
3 1986 (SARA), Pub. L. 99-499, and the Community Environmental Response Facilitation Act  
4 (CERFA), Pub. L. No. 102-26; and the NCP and other implementing regulations.
- 5 h) CDPHE means the Colorado Department of Public Health and Environment and/or any  
6 predecessor and successor agencies, their employees, and authorized representatives.
- 7 i) Closure, in the context of RCRA/CHWA hazardous waste management units, means actions  
8 taken by an owner or operator of a treatment, storage, or disposal unit to discontinue operation of  
9 the unit in accordance with the performance standards specified in 6 CCR 1007, § 264.111 or  
10 § 265.111, as appropriate.
- 11 j) Colorado Hazardous Waste Act (CHWA) means sections 25-15-101 to 25-15-327, C.R.S. as  
12 amended.
- 13 k) Corrective Action (CA) means the RCRA/CHWA term for the cleaning up of releases of  
14 hazardous waste or hazardous constituents.
- 15 l) Corrective Action Decision (CAD) means the CHWA decision by the State selecting a corrective  
16 measure alternative or alternatives to remediate a release of hazardous constituents or wastes.
- 17 m) Days means calendar days unless business days are specified. Any submittal that, under the  
18 requirements of this Agreement, would be due on a Saturday, Sunday, or State of Colorado or  
19 federal holiday shall be due on the following business day.
- 20 n) DOE or U.S. DOE means the United States Department of Energy and/or any predecessor or  
21 successor agencies (other than the U.S. Fish and Wildlife Service of the Department of the  
22 Interior), their employees, and authorized representatives.
- 23 o) EPA or U.S. EPA means the United States Environmental Protection Agency and any successor  
24 agencies, its employees, and authorized representatives.
- 25 p) Final CAD/ROD means the final remedial/corrective action decision for Rocky Flats selected and  
26 approved pursuant to paragraph 83 of RFCA.
- 27 q) Final RCRA Facility Investigation-Remedial Investigation/Corrective Measures Study-  
28 Feasibility Study (RFI-RI/CMS-FS or RI/FS) means the combined RCRA-CERCLA document  
29 released July 14, 2006, that (i) describes the environmental conditions at Rocky Flats following  
30 completion of all accelerated actions and (ii) analyzes alternatives for final remedial actions to  
31 ensure that the residual contamination at the Rocky Flats Environmental Technology Site  
32 (RFETS or Site) does not present an unacceptable risk to human health or the environment.
- 33 r) Individual Hazardous Substance Site (IHSS) means specific locations where solid wastes,  
34 hazardous substances, pollutants, contaminants, hazardous wastes, or hazardous constituents may  
35 have been disposed or released to the environment within the Site at any time, irrespective of  
36 whether the location was intended for the management of these materials.

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- 1 s) Institutional controls means non-engineered instruments, such as administrative and legal  
2 controls, that minimize the potential for human exposure to contamination by limiting land or  
3 resource use.
- 4 t) Legacy management means the physical controls, institutions, information and other  
5 mechanisms needed to ensure protection of people and the environment following  
6 implementation of cleanup actions. Legacy management includes, *inter alia*, land-use  
7 controls, monitoring, maintenance, and information management.
- 8 u) Operable Unit (OU) means a grouping of IHSSs into a single administrative unit for purposes of  
9 efficiently managing cleanup activities.
- 10 v) Periodic Review means the review required under 42 U.S.C. § 9621(c) to assure the continued  
11 protectiveness of CERCLA remedies selected that result in hazardous substances, pollutants, or  
12 contaminants remaining on-site.
- 13 w) Peripheral Operable Unit or Peripheral OU means the portion of Rocky Flats which was  
14 determined in the final CAD/ROD not to require any additional remedial actions. Generally  
15 speaking, the Peripheral OU includes most of the former Buffer Zone surrounding the former  
16 Industrial Area.
- 17 x) Post-Closure refers to regulatory requirements under RCRA and CHWA for regulated hazardous  
18 waste management units that do not meet the standards for clean closure. Post-closure  
19 requirements are found in 6 CCR 1007-3 § 265.117 through 265.121.
- 20 y) Public Involvement Plan means the plan for providing information regarding implementation of  
21 this Agreement to the public, and for seeking public review and comment on proposed actions.
- 22 z) RCRA means the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 *et. seq.*, as  
23 amended by the Hazardous and Solid Waste Amendments of 1984, the Federal Facility  
24 Compliance Act of 1992.
- 25 aa) Record of Decision (ROD) means the CERCLA decision by DOE and EPA, or by EPA alone in  
26 the event EPA disagrees with a remedy proposed by DOE, selecting the response action or  
27 actions to remedy environmental and human health concerns at the Site.
- 28 bb) Remedy performance standards are standards that the response actions selected and approved in  
29 the final CAD/ROD must attain and maintain. Remedy performance standards include narrative  
30 and numeric standards.
- 31 cc) Requirements of this Agreement means provisions of this Agreement that specify:
- 32 i) actions DOE must perform to accomplish the activities regulated under this Agreement;  
33 ii) dates by which it must perform such actions;  
34 iii) standards which DOE must achieve through such actions; or  
35 iv) the manner in which such actions must be reviewed, approved, performed and overseen to  
36 comply with this Agreement and applicable environmental laws.

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"Requirements of this Agreement" also includes all federal and state applicable or relevant and appropriate requirements (ARARs) incorporated in the final CAD/ROD.

dd) Response Action means a "response action" under CERCLA, a corrective action, closure or post-closure requirement under RCRA or CHWA. "Response action" includes any requirement for institutional controls imposed under RCRA, CERCLA or CHWA.

ee) Rocky Flats means the property owned by the United States Government, formerly known as the Rocky Flats Plant, Rocky Flats Site, or the Rocky Flats Environmental Technology Site, as identified in the map in Attachment 1. Rocky Flats is divided into the Central and Peripheral Operable Units.

ff) the Site (except when used in the phrase "Rocky Flats Environmental Technology Site") means the areas that were listed on the National Priorities List on September 21, 1989 due to a release of hazardous substances from the Rocky Flats Plant. The Site includes Rocky Flats and certain adjacent properties.

gg) State means the State of Colorado, its employees, and authorized representatives.

hh) State environmental law means state laws regulating management or control of pollution.

ii) Submittal means every document or other item to be provided to the State and/or EPA pursuant to this Agreement.

## **PART 4        LEGAL BASIS OF AGREEMENT**

10. Based on information available as of the date of execution of this Agreement, EPA and CDPHE have determined the following:

a) From 1952 until 1992, the mission of the Rocky Flats Plant was production of component parts for nuclear weapons.

b) The Site was proposed for inclusion on the National Priorities List (NPL) on October 15, 1984, pursuant to section 105 of CERCLA, 42 U.S.C. § 9605. The listing became final September 21, 1989. In March 2003, EPA determined that the 259-acre National Wind Technology Center was not part of the NPL Site.

c) DOE is a "person" as defined in section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

d) The Site is a "facility" as defined in sections 101(9) and 120 of CERCLA, 42 U.S.C. § 9601(9) and 9620.

e) DOE is the "owner" of Rocky Flats within the meaning of section 101(20)(A) of CERCLA, 42 U.S.C. § 9601(20)(A).

f) Hazardous substances have been released into the environment at the Site as the term "release" is defined in section 101(22) of CERCLA, 42 U.S.C. § 9601(22).



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- 1 g) The Site is subject to the requirements of CERCLA.
- 2 h) DOE is a responsible party subject to liability pursuant to 42 U.S.C. § 9607 of CERCLA, with  
3 respect to present and past releases at the Site.
- 4 i) Pursuant to § 6001 of RCRA, 42 U.S.C. § 6961, DOE is subject to, and must comply with RCRA  
5 and CHWA.
- 6 j) DOE notified EPA of hazardous waste activity at the Rocky Flats Plant on or about August 18,  
7 1980. On November 1, 1985, DOE filed RCRA and CHWA Part A and B permit applications  
8 with both EPA and CDPHE. On September 30, 1991, CDPHE issued a CHWA permit for a  
9 number of hazardous waste management units at Rocky Flats. On July 26, 2006, CDPHE  
10 terminated DOE's CHWA permit.
- 11 k) Rocky Flats includes the Present Landfill and the former Solar Evaporation Ponds, regulated  
12 hazardous waste management units subject to the post-closure requirements of 6 CCR 1007-3,  
13 § 265.117-121.
- 14 l) Certain wastes and constituents at Rocky Flats are hazardous wastes or hazardous constituents as  
15 defined by section 1004(5) of RCRA, 42 U.S.C. § 6903(5), 40 C.F.R., Part 261, section  
16 25-15-101(9) of CHWA, and 6 CCR 1007-3, Part 261.
- 17 m) Rocky Flats constitutes a "facility" within the meaning of sections 3004 and 3005 of RCRA,  
18 42 U.S.C. §§ 6924 and 6925, and section 25-15-303 of CHWA.
- 19 n) DOE is the owner and operator of Rocky Flats within the meaning of RCRA and CHWA.
- 20 o) There is, or has been, a release of hazardous waste and/or hazardous constituents into the  
21 environment at Rocky Flats from Solid Waste Management Units and disposal of hazardous  
22 waste within the meaning of section 3004(u) of RCRA, and 6 CCR 1007-3, §§ 264.101 and  
23 265.5. DOE is thus subject to the corrective action requirements of RCRA and CHWA at Rocky  
24 Flats.
- 25 p) Investigation and cleanup of the Site was conducted pursuant to three different agreements: a  
26 1986 Compliance Agreement, the 1991 Interagency Agreement, and the 1996 Rocky Flats  
27 Cleanup Agreement. All three agreements incorporated requirements of RCRA, CHWA and  
28 CERCLA. The 1996 RFCA provided an accelerated action framework for individual cleanup  
29 activities and the basis for final cleanup decisions through a final CAD/ROD. As described in the  
30 RI/FS for the final CAD/ROD, significant cleanup actions were conducted as accelerated actions  
31 under RFCA.
- 32 q) Under the 1991 Interagency Agreement, the Site was divided into 16 Operable Units. Under the  
33 1991 Agreement and RFCA, CAD/RODs were completed for OUs 1, 3, 11, 15 and 16. The  
34 selected remedy for OU 3 was no action based upon the conclusion that all IHSSs within OU 3  
35 were already in a state protective of human health and the environment. When RFCA was  
36 signed, the remaining OUs were reconfigured to further streamline administrative processes for  
37 site cleanup. Former OUs 4, 8, 9, 10, 12, 13, and 14 became the Industrial Area OU. OU 2 was

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re-named the Buffer Zone OU. In 2004, the RFCA Parties further consolidated OUs by consolidating OUs 5, 6, and 7 with the Buffer Zone OU.

r) DOE released the Proposed Plan for public comment beginning July 14, 2006. At the same time, it released the RI/FS and the Comprehensive Risk Assessment for informational purposes. The RI/FS evaluated the remaining two OUs at Rocky Flats: the Buffer Zone and the Industrial Area.

s) Results of the RI analysis identified the area of Rocky Flats impacted by DOE activities. Based on this analysis, the RFCA Parties decided to reconfigure the OU boundaries to consolidate all areas of Rocky Flats that required final remedial actions into a final reconfigured Central OU. The boundary of this new Central OU also considers practicalities of future land management. The remaining portions of Rocky Flats have been consolidated into the reconfigured Peripheral OU.

t) The Site met construction completion in September 2006 and the final CAD/ROD was issued on September 29, 2006. The response action selected and approved in the final CAD/ROD was no action for the Peripheral OU, and institutional and physical controls for the Central OU.

u) The requirements imposed by this Agreement are necessary to protect the public health, welfare, and the environment.

## **PART 5      REGULATORY APPROACH**

11. The Parties agree to follow a consultative process in implementing this Agreement. "Consultation" and "the consultative process" mean the responsibility of one Party to meet and confer with another Party and any appropriate contractors in order to reach agreement, to the extent possible, regarding a proposed course of action. Consultation involves a cooperative approach to problem solving at the staff level. Consultation includes the responsibility to raise any concerns or suggestions regarding the implementation of this Agreement as soon as the concern or suggestion is identified, to maximize the chances of reaching agreement before a document must be submitted or a regulatory determination rendered. Consultation means timely participation at the staff or management level, as appropriate, to reach consensus among the regulators and DOE so that there is a clear understanding of the actions or direction to be taken based upon the outcome of the consultative process.

12. Each Party shall designate an individual to act as the Project Coordinator for activities regulated under this Agreement. The Parties' Project Coordinators will meet periodically to discuss the implementation of this Agreement.

13. The following activities are regulated under this Agreement:

a) response activities described in the final CAD/ROD and further specified in the Attachments, including post-closure and legacy management requirements such as ongoing maintenance, operation and monitoring of implemented remedies and information management activities; and

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b) any additional response actions that may be required.

14. In making regulatory decisions regarding activities regulated by this Agreement, the State and EPA shall apply the statutory and regulatory requirements and their guidance or policy positions in effect at the time a decision is made.

15. The Parties recognize that the activities regulated under this Agreement are subject to regulation under CERCLA, RCRA, and/or applicable State environmental law, depending on the nature of the particular activity in question. To streamline implementation of this Agreement, the State shall exercise its authority under CHWA and RCRA, or other applicable State environmental law as appropriate, to approve, approve with modifications, or disapprove activities regulated under this Agreement to the extent such activities involve materials subject to regulation under state environmental law. The State shall approve, approve with modifications, or disapprove activities involving CERCLA hazardous substances, pollutants or contaminants that are not subject to regulation under state environmental law as provided in paragraph 16.

16. For purposes of implementing this Agreement, and except as provided in paragraph 17, the State shall carry out CERCLA authority to:

a) approve, approve with modifications, or disapprove activities regulated under this Agreement involving CERCLA hazardous substances, pollutants or contaminants that are not regulated under state environmental law;

b) determine that activities or conditions at Rocky Flats constitute a release or substantial threat of release of hazardous substances to the environment; and

c) specify additional response actions to be taken by DOE.

The State and EPA have entered into a Memorandum of Understanding, set forth in Appendix 1, that defines the State-EPA relationship for purposes of this paragraph and the remainder of this Agreement. DOE may dispute State decisions under any provision of this Agreement that are made using the CERCLA authority described in this paragraph as provided in Part 7. Nothing in this paragraph constitutes a change to DOE's or EPA's status under CERCLA § 120(e) or Executive Order 12580, nor any limitation on DOE's authority under the AEA.

17. The activities identified in this paragraph are ones where CERCLA requires an EPA determination. For these activities, EPA shall consult with the State and the State may propose recommendations for EPA's consideration. CDPHE and EPA shall consult regarding the recommended decision prior to EPA's issuance of a final decision.

a) A decision to concur or non-concur in a CERCLA periodic review; and

b) Deletion of any portion of the Site from the NPL.

Following consultation, EPA shall render a decision regarding any recommendation to proceed with deletion or concurrence in a periodic review, as appropriate.

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## **1 PART 6      REQUIREMENTS**

2 18.      The State and EPA shall have the right of entry to the Central OU at reasonable times for the  
3      purpose of determining compliance with the terms of this Agreement. The State and EPA shall give  
4      prior notice by phone or email before entering the Site. Nothing in this Agreement shall impair any  
5      other authority the State or EPA may otherwise have to enter and inspect the Central OU.

6 19.      DOE shall implement the response actions identified in the final CAD/ROD, as specified in  
7      Attachment 2, to ensure the remedy performance standards are met. With the exception of some  
8      monitoring points that are located in the Peripheral OU, the requirements of this Agreement only  
9      apply to the Central OU.

10 20.      DOE shall conduct legacy management activities to ensure the long-term protectiveness of the  
11      response actions that have been implemented at the Central OU. Legacy management activities  
12      include:

13      a) monitoring of environmental conditions (e.g., surface water or groundwater quality) and the  
14      performance or condition of response actions (e.g., physical systems for contaminant  
15      containment, including caps; contaminant treatment systems such as passive groundwater  
16      treatment barrier walls; contaminant monitoring devices such as groundwater monitoring wells;  
17      physical access restrictions such as fences or locks; and institutional controls);

18      b) operation and maintenance of response actions;

19      c) information management; and

20      d) institutional controls.

21 21.      DOE shall conduct monitoring of environmental conditions and response actions, as provided in  
22      Attachment 2, to ensure that:

23      a) the performance standards specified in Attachment 2 are met and maintained;

24      b) engineered response actions are functioning as designed; and

25      c) there are no violations of institutional controls.

26 22.      DOE shall operate and maintain response actions as provided in Attachment 2, to ensure that  
27      such response actions perform as intended.

28 23.      DOE shall maintain information related to:

29      a) the release of hazardous substances, pollutants, contaminants, and hazardous wastes and  
30      constituents at the Site;

31      b) the response actions taken to address such releases; and

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c) ongoing monitoring, inspection, operation and maintenance of the remedy, including information relating to additional remedial actions, if any.

Maintenance of information described in (a) – (c) above shall comply with the recordkeeping requirements of CERCLA, related EPA guidance and policy, DOE records retention schedules developed in accordance with the National Archives and Records Administration records management handbook, Disposition of Federal Records (NSN 7610-01-055-8704), and RCRA and CHWA requirements. Specifically, DOE shall maintain the CERCLA Administrative Record for the final CAD/ROD in conformance with the requirements of CERCLA section 113, including the requirement that the Administrative Record be available at or near the facility. Maintenance of all information described in (a) – (c) above shall be sufficient to enable reasonably prompt retrieval of any retained information, and to enable the Parties to implement the requirements of this Agreement, including the requirements for periodic review. Information described in (a) – (c) above shall be proposed for permanent retention in accordance with 36 CFR 1228.28(b).

24. DOE shall ensure compliance with all institutional controls specified in Attachment 2, so that the response action at the Central OU remains protective of human health and the environment. DOE shall develop procedures for implementing, monitoring, and maintaining compliance with institutional controls, consistent with Attachment 2.

25. DOE, in coordination with CDPHE, EPA and the public, has developed the Public Involvement Plan found in Appendix 2. DOE shall maintain and implement the Public Involvement Plan in a manner that complies with public participation requirements of NEPA, CERCLA, RCRA, and CHWA, as set forth in this paragraph. The purpose of the Public Involvement Plan is to ensure that educational, outreach, notice and information systems are responsive to the needs of the public, and allow for public input to decision-making processes under this Agreement. The Public Involvement Plan shall be reviewed in conjunction with the periodic review requirements of this Agreement and may be modified as appropriate in light of future circumstances at Rocky Flats.

26. DOE shall submit for State review and approval periodic reports on inspection, maintenance, and environmental monitoring. These reports shall meet the requirements specified in Attachment 2. All reports submitted pursuant to this paragraph shall be included in the site file or appropriate Administrative Record for the Site.

27. The Parties have established remedy performance standards to ensure protection of human health and the environment in accordance with CERCLA, RCRA and CHWA, and to meet ARARs as required by CERCLA. DOE shall comply with these remedy performance standards and other requirements contained in Attachment 2. If, on the basis of an environmental monitoring report or other information, the State believes that the remedy performance standards of Attachment 2 are not being met, or are likely not to be met, the State shall notify DOE and EPA. The State, EPA and DOE shall consult to determine an appropriate response. If the State and DOE are unable to agree on the appropriate response, the State shall make a determination specifying additional response actions to be taken by DOE. DOE and EPA may dispute State determinations under the appropriate provisions of Part 7.

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- 1 28. If, on the basis of environmental monitoring conducted pursuant to Attachment 2 of this  
2 Agreement, the State determines that a surface water standards for any non-radiological  
3 contaminant (as described in Attachment 2 of this Agreement) has been exceeded at a Point of  
4 Compliance, DOE shall be subject to penalties under CHWA and RCRA. If, on the basis of  
5 environmental monitoring conducted pursuant to Attachment 2 of this Agreement, the State  
6 determines that a stream standard for any radiological contaminant (as described in Attachment 2  
7 of this Agreement) has been exceeded at a Point of Compliance, it shall advise EPA so that EPA  
8 may determine whether DOE shall be subject to penalties under CERCLA.
- 9 29. Except as provided in paragraph 17, the State shall be responsible for review and approval of all  
10 documents received pursuant to this Agreement.
- 11 30. For documents subject to State review and approval, the State shall approve, approve with  
12 modifications, or disapprove any document submitted under this Agreement. All such State  
13 determinations shall be in writing. If the State disapproves or approves with modifications any  
14 such document, it shall provide a written explanation of the disapproval or approval with  
15 modifications. Within fifteen (15) days of receipt of the State's approval with modifications or  
16 disapproval of the document, DOE shall:
- 17 a) In the case of an approval with modifications only, submit a notice of acceptance of the  
18 document as modified and begin to implement the modified document;
- 19 b) In the case of a disapproval only, submit a revised document for State review and approval  
20 (DOE may not select this option if the State has included in its disapproval an alternate  
21 document that shall be implemented by DOE); or
- 22 c) Submit a notice of dispute of the disapproval or approval with modifications.
- 23 d) If DOE fails to do any of the above within the specified time, DOE shall be deemed to have  
24 failed to comply with this Agreement, and the State may bring an enforcement action,  
25 including an assessment of penalties.
- 26 31. Any report, document, or submittal provided to EPA and CDPHE pursuant to a schedule  
27 identified in or developed under this Agreement shall be delivered by any method that verifies  
28 receipt by the intended recipient, including email. Such reports, documents, or submittals shall be  
29 delivered to the addresses listed in Attachment 3. Documents sent to DOE shall be sent to the  
30 address listed in Attachment 3. Documents must be sent to the designated addresses in a manner  
31 designed to be received by the date due, unless otherwise specified by the Parties.
- 32 32. Any schedule established according to the provisions of this Agreement shall be changed upon  
33 receipt of a timely request for change, provided good cause, as defined in this Part, exists for the  
34 requested change. Any request for change by any Party shall be submitted in writing and shall  
35 specify:
- 36 a) the requirement that is sought to be changed; and  
37 b) the good cause(s) for the change.

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1 33. Good cause for a change includes the following:

- 2 a) any unforeseen or unexpected event arising from factors beyond the control of a Party that could
- 3 not be avoided or overcome by due diligence and that causes a delay in, or prevents the
- 4 performance of, any obligation under this Agreement;
- 5 b) a delay caused by EPA or CDPHE's failure to meet any requirement of this Agreement;
- 6 c) a delay caused by the initiation of judicial action;
- 7 d) a delay caused by the need to perform other, unanticipated work under this Agreement; and
- 8 e) anything else mutually agreed to by the Parties as constituting good cause.

9 34. The Parties recognize that in implementing approved response actions, field modifications may  
10 be necessary. DOE may implement field modifications that are consistent with the intent of the  
11 approved action after receiving oral approval from CDPHE. All such oral approvals shall be  
12 documented in a contact record. Notwithstanding Part 10 of this Agreement, no public notice is  
13 required for such field modifications.

## **14 PART 7 RESOLUTION OF DISPUTES**

15 35. In order to ensure timely resolution of disagreements, staff representatives of the Parties shall  
16 work to resolve disagreements at the technical working level. Once it is determined that an impasse  
17 has been reached at the staff level, staff representatives will draft a written statement of the dispute.  
18 The staff level representatives will promptly provide a copy of the written statement of dispute to the  
19 Dispute Resolution Committee (DRC), which is comprised of the Director, Hazardous Materials and  
20 Waste Management Division, Colorado Department of Public Health and Environment; the Director,  
21 Federal Facilities Program, EPA Region 8; and the Director, Office of Site Operations, Office of  
22 Legacy Management, DOE. The DRC will have one month to meet and resolve the dispute or  
23 elevate it to the Senior Executive Committee (SEC). The SEC is comprised of the Director, Office of  
24 Environment, CDPHE; the Regional Administrator, EPA Region 8, and the Deputy Director, Office  
25 of Legacy Management, DOE.

26 36. The SEC members shall, as appropriate, confer, meet, and exert their best efforts to resolve the  
27 dispute and issue a written decision.

28 a) If unanimous resolution of the dispute is not reached within 30 days, the matter shall proceed as  
29 follows:

- 30 i) for determinations the State makes based on State environmental law, the CDPHE Director of  
31 the Office of the Environment shall issue a written decision;
- 32 ii) for matters involving CERCLA determinations, the Regional Administrator for Region 8  
33 shall issue a written decision.

34 b) Following issuance of such a written determination under subsection (a), matters may be elevated  
35 to the final level of dispute resolution as follows:

- 36 i) DOE or EPA may request that the decision of the Director of the Office of the Environment  
37 be elevated to the Executive Director of CDPHE for final resolution, but only upon making a

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written finding that the dispute involves an issue of significant state or national policy. Such written finding must be made and transmitted to the other parties within ten days of the expiration of the 30-day period for SEC dispute resolution. Upon request, and prior to making a final determination, the Executive Director shall consult with the Administrator of EPA and the Secretary of Energy. The Executive Director shall have 60 days within which to resolve the dispute. If the dispute is not resolved by consensus, the Executive Director shall issue a final written determination that shall then be subject to appeal in accordance with §§ 25-15-305 or 25-15-308, as appropriate;

- ii) The Executive Director of CDPHE or the Secretary of Energy may request that the decision of the Regional Administrator be elevated to the EPA Administrator, but only upon making a written finding that the dispute involves a significant issue of state or national policy. Such written finding must be made and transmitted to the other parties within ten days of the expiration of the 30-day period for SEC dispute resolution. Upon request, and prior to making a final determination, the Administrator shall consult with the Executive Director and the Secretary of Energy. The Administrator shall have 60 days within which to resolve the dispute. If the dispute is not resolved by consensus, the Administrator shall issue a final written determination. The State may appeal such written decision in accordance with applicable law, and may take any other action available to it under applicable law.

37. Within twenty-one days of resolution of a dispute pursuant to the procedures specified in this section, DOE shall incorporate the resolution and final determination into the appropriate plan, schedule or procedures and proceed to implement this Agreement according to the amended plan, schedule or procedures.

38. Resolution of a dispute pursuant to this Section of the Agreement constitutes a final resolution of any dispute arising under this Agreement. All parties shall abide by all terms and conditions of any final resolution of dispute obtained pursuant to this Section of this Agreement, subject to Part 9 (Reservation of Rights).

39. Time frames in this Part may be extended by mutual agreement of the Parties. It is the Parties' intention that the officials specified in this Part exercise their responsibilities personally, to the extent practicable. Nevertheless, each Party reserves the right to delegate those responsibilities.

## **PART 8      ENFORCEABILITY**

40. The Parties agree that all Parties shall have the right to enforce the requirements of this Agreement.

41. All requirements of this Agreement shall be enforceable by any person, including the State, pursuant to sections 310(c) and 113(h)(4) of CERCLA, and any violation of such requirements of this Agreement will be subject to civil penalties under sections 109 and 310(c) of CERCLA. DOE agrees that the State and any of its agencies are "persons" within the meaning of section 310 of CERCLA.



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- 1 42. Requirements of this Agreement that are requirements of RCRA and CHWA shall be enforceable  
2 by any person, including the State, pursuant to any rights existing under section 7002(a)(1)(A) of  
3 RCRA. DOE agrees that the State and any of its agencies are "persons" within the meaning of  
4 section 7002(a) of RCRA. Nothing in this paragraph shall be construed as contravening CERCLA  
5 § 113(h).
- 6 43. Requirements of this Agreement that are requirements of RCRA or CHWA may be enforced by  
7 CDPHE pursuant to § 25-15-308 or § 25-15-322, C.R.S.
- 8 44. EPA may impose stipulated penalties as described in paragraphs 45 through 52.
- 9 45. Prior to EPA imposing a stipulated penalty, the Parties shall use the consultative process as  
10 described in paragraph 11 of this Agreement to try to resolve any issue addressed in this section.  
11 In the event that DOE fails to submit a periodic review pursuant to the appropriate timetable or  
12 deadline in accordance with the requirements of paragraph 67 and Attachment 2 of this  
13 Agreement, or fails to comply with a term or condition of this Agreement which relates to the  
14 actual performance of monitoring and operation and maintenance required by Attachment 2 of  
15 this Agreement, or fails to comply with paragraph 27 of this Agreement, EPA may assess DOE a  
16 stipulated penalty in an amount not to exceed \$5,000 for the first week (or part thereof), and  
17 \$10,000 for each additional week (or part thereof) for which a failure set forth in this paragraph  
18 occurs. Stipulated penalties will accrue from the date of the missed deadline or the date the  
19 noncompliance occurs, as appropriate, until such failure is corrected.
- 20 46. Upon determining that DOE has failed in a manner set forth in paragraph 45, EPA shall so  
21 notify DOE in writing. If the failure in question is not already subject to dispute resolution at the  
22 time such notice is received, DOE shall have fifteen (15) days after receipt of the notice to invoke  
23 dispute resolution on the question of whether the failure did in fact occur or occurred as the result  
24 of an event constituting good cause. DOE shall not be liable for the stipulated penalty assessed if  
25 the failure is determined, through the dispute resolution process, not to have occurred or to have  
26 occurred as the result of an event constituting good cause pursuant to paragraph 33 of this  
27 Agreement. No assessment of a stipulated penalty shall be final until the conclusion of dispute  
28 resolution procedures related to the assessment of the stipulated penalty. DOE's invocation of  
29 dispute resolution shall toll the obligation to pay the assessed penalty, but shall not toll the accrual  
30 of the stipulated penalties. Collection of a stipulated penalty by EPA shall preclude EPA from  
31 seeking to also impose a statutory penalty arising from DOE's failure to meet the same  
32 requirement.
- 33 47. DOE's annual report to Congress required by section 120(e)(5) of CERCLA, 42 U.S.C. §  
34 9620(e)(5), shall include, with respect to each final assessment of a stipulated penalty against DOE  
35 under this Agreement, each of the following:
- 36 a) The facility responsible for the failure;
- 37 b) A statement of facts and circumstances giving rise to the failure;

# ***DRAFT ROCKY FLATS LEGACY MANAGEMENT AGREEMENT***

- c) A statement of any administrative or other corrective action taken at the relevant facility, or a statement of why such measures were determined to be inappropriate;
- d) A statement of any additional action taken by or at the facility to prevent recurrence of the same type of failure; and
- e) The total dollar amount of the stipulated penalty assessed for the particular failure.

48. Any stipulated penalty assessed by the EPA shall be payable to the Hazardous Substances Response Trust Fund from funds authorized and appropriated for that purpose. DOE shall request specific authorization and appropriation to pay such penalty in its budget submittal for FY+1, unless DOE has already submitted its final budget for that year to the Office of Management and Budget, in which case DOE shall request such specific authorization and appropriation in its FY+2 budget.

49. In no event shall paragraph 45 give rise to a stipulated penalty in excess of the amount set forth in section 109 of CERCLA, 42 U.S.C. § 9609.

50. This section shall not affect DOE's ability to obtain an extension of a timetable, deadline or schedule pursuant to paragraph 32 of this Agreement.

51. Nothing in paragraph 45 shall preclude EPA or CDPHE from any other sanction that may be available to them for violations of this agreement in lieu of stipulated penalties, nor preclude EPA or CDPHE from seeking injunctive relief to compel DOE to remedy violations of the requirements of this Agreement.

52. Nothing in this Agreement shall be construed to render any officer or employee of DOE personally responsible for the payment of any stipulated penalty assessed pursuant to this Agreement.

## **PART 9      RESERVATION OF RIGHTS**

53. The Parties each reserve any rights they may have to seek judicial review of a proposed decision or action taken with respect to any response action on the grounds that such proposed decision or action conflicts with RCRA, CHWA or CERCLA. The Parties agree to exhaust dispute resolution prior to seeking such judicial review.

54. Nothing in this Agreement shall be interpreted to affect DOE's authority under the AEA. Nor shall anything in this Agreement impair the State's ability to argue that the cleanup, deactivation and decommissioning of the former Rocky Flats Plant pursuant to the RFCA have altered the scope of DOE's authority under the AEA.

# *DRAFT ROCKY FLATS LEGACY MANAGEMENT AGREEMENT*

- 1 55. The Parties have determined that the activities to be performed under this Agreement are in the  
2 public interest. Except as provided in paragraph 56, EPA and CDPHE agree that compliance with  
3 this Agreement shall stand in lieu of any administrative and judicial remedies against DOE or its  
4 present or future contractors that are available to EPA and CDPHE regarding the currently known  
5 releases or threatened releases of hazardous substances, pollutants, contaminants, hazardous wastes,  
6 or hazardous constituents at the Central OU that are the subject of the activities being performed by  
7 DOE under this Agreement.
- 8 56. Nothing in this Agreement shall preclude EPA or the State from exercising any administrative or  
9 judicial remedies available to them under the following circumstances:
- 10 a) DOE fails to comply with any requirement of the Agreement;
- 11 b) EPA or CDPHE determines that previously unknown conditions or new information, together  
12 with any other relevant information, indicates that previously implemented response actions  
13 are not protective of human health or the environment; or
- 14 c) upon CDPHE's or EPA's determination that such action is necessary to abate an imminent and  
15 substantial endangerment to the public health, welfare, or the environment.
- 16 57. This Agreement shall not be construed to limit in any way any rights that may be available by  
17 law to any citizen to obtain information about the work under this Agreement or to sue or intervene  
18 in any action to enforce State or federal law.
- 19 58. The Parties each reserve their rights to challenge any decision regarding additional response  
20 action under all applicable laws.
- 21 59. Except as provided in paragraph 55, DOE is not released from any liability or obligation which it  
22 may have pursuant to any provisions of State and federal law, nor does DOE waive any rights it may  
23 have under such law to defend any enforcement actions against it.
- 24 60. EPA and the State reserve all rights to take any legal or response action for any matter not  
25 specifically part of the activities regulated under this Agreement.
- 26 61. The Parties agree that in any administrative or judicial proceeding seeking to enforce the  
27 requirements of this Agreement, the DOE may raise as a defense that any failure or delay was caused  
28 by the unavailability of appropriated funds. In particular, nothing herein shall be construed as  
29 precluding DOE from arguing either that the unavailability of appropriated funds constitutes good  
30 cause, or that no provisions of this Agreement or Order shall be interpreted to require the obligation  
31 or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. §§ 1301 or 1341, or the  
32 Atomic Energy Act, 42 U.S.C. § 2201. While the State disagrees that an Anti-Deficiency Act  
33 defense, or any other defense based on lack of funding exists, the Parties do agree and stipulate that it  
34 is premature at this time to raise and adjudicate the existence of such a defense.
- 35 62. Nothing in this Agreement shall be interpreted to affect EPA's authority under CERCLA to  
36 impose requirements necessary to protect public health and the environment.

# ***DRAFT ROCKY FLATS LEGACY MANAGEMENT AGREEMENT***

1 63. In the event of any administrative or judicial action by the State or EPA, all Parties reserve all  
2 rights, claims, and defenses available under the law.

## **3 PART 10 AMENDMENT OF AGREEMENT AND MODIFICATION OF ATTACHMENTS**

4 64. Except as provided in paragraph 70 (termination by State), the body of this Agreement (i.e.,  
5 pages 1-- 23 -) may only be amended by mutual agreement of the Parties. Such amendments shall be  
6 in writing and shall have as their effective date the date on which they are signed by all Parties,  
7 unless otherwise agreed. Any dispute as to the need for a proposed amendment shall be resolved  
8 pursuant to Part 7 of this Agreement.

9 65. The State or EPA may, after consultation with one another, require DOE to submit a modification  
10 to any Attachment to the Agreement if either determines that such modification is necessary to  
11 ensure protection of human health or the environment. DOE may propose such modifications to  
12 Attachments to the Agreement as it deems appropriate. The State shall review and consult with EPA  
13 regarding any modifications proposed by DOE, and may approve the proposed modification if it  
14 finds the modification will ensure protection of human health and the environment.

15 66. The Parties shall provide public notice of all amendments to this Agreement, and any  
16 modifications of Attachments, other than Attachment 3. Amendments or modifications that  
17 constitute a significant change from existing requirements of this Agreement shall be subject to  
18 public comment.

## **19 PART 11 PERIODIC REVIEW**

20 67. DOE, EPA and CDPHE will, pursuant to CERCLA section 121(c), review the response action  
21 selected and approved in the final CAD/ROD no less often than every five years to assure that human  
22 health and the environment are being protected. The next five-year review will be conducted in  
23 2007, as specified in more detail in Attachment 2. Because the CAD/RODs for OU 3 and the  
24 Peripheral OU determined that those OUs are suitable for unrestricted use, the periodic reviews  
25 required under this paragraph are limited to the Central OU. DOE shall prepare a report  
26 summarizing environmental conditions and provide other documentation as needed to support this  
27 review. To the extent that remedies have incorporated institutional controls, the Parties shall review  
28 the continuing effectiveness of such controls, and shall evaluate whether additional response action  
29 could be taken that would reduce the need to rely on institutional controls. In making such an  
30 evaluation, the Parties shall consider all relevant factors, including advances in technology and the  
31 availability of funds. If upon such review the Parties find that further response action by DOE is  
32 warranted to assure the protection of human health and the environment, DOE shall, consistent with  
33 sections 104 and 106 of CERCLA, implement response actions necessary to abate any release or  
34 threat of a release of a hazardous substance, in accordance with a schedule agreed upon by the  
35 Parties. The Parties agree that Part 10 of this Agreement shall not be construed as a limitation on the  
36 requirement for further response actions which might be required as a result of the periodic review  
37 mandated by CERCLA section 121(c). If the Parties are unable to agree whether additional response  
38 actions are required, the matter shall be resolved pursuant to Part 7.

# ***DRAFT ROCKY FLATS LEGACY MANAGEMENT AGREEMENT***

1 68. Nothing in this Part shall be construed as a limitation on the State's ability to make a  
2 determination specifying additional response actions be taken pursuant to paragraph 27.

## **3 PART 12 DURATION/TERMINATION**

4 69. Except as provided in the next paragraph, this Agreement shall remain in effect until:

5 a) DOE and EPA jointly determine that the Central OU meets CERCLA requirements for  
6 unrestricted use and unlimited exposure; and

7 b) CDPHE determines that the Central OU meets CHWA requirements for unrestricted use and  
8 unlimited exposure.

9 70. CDPHE may, in its sole discretion, terminate this Agreement upon 60 days' written notice to the  
10 other Parties. Termination of the Agreement by CDPHE shall be effective on the 60th day after such  
11 notice, unless CDPHE agrees otherwise in writing before such date. Once termination is effective  
12 pursuant to this paragraph, this Agreement shall have no further force or effect, except that any  
13 requirements of this Agreement that are imposed pursuant to CERCLA shall remain enforceable as  
14 requirements of a CERCLA § 120 Interagency Agreement between EPA and DOE.

## **15 PART 13 SEVERABILITY**

16 71. If any provision of this Agreement is ruled invalid, illegal, unconstitutional, or unenforceable, the  
17 remainder of the Agreement shall not be affected by such ruling.

## **18 PART 14 RECOVERY OF STATE COSTS**

19 72. DOE agrees to reimburse CDPHE for:

20 a) all non-discriminatory state environmental fees or assessments; and

21 b) CERCLA administrative or oversight activities incurred which specifically relate to the  
22 implementation of this Agreement, to the extent such costs are reasonable, not inconsistent with  
23 the NCP, and are not covered by permit fees and other assessments, or by any other agreement  
24 between the Parties.

25 73. The amount and schedule of payment of these costs will be negotiated based on anticipated needs  
26 and in consideration of DOE's multi-year funding cycles. CDPHE reserves all rights it has to recover  
27 any other past and future costs in connection with CERCLA activities conducted under this  
28 Agreement. CDPHE shall annually provide DOE a written estimate of projected costs to be incurred  
29 in implementing this Agreement for the upcoming two fiscal years, no later than the end of the first  
30 quarter of each fiscal year. DOE and CDPHE may choose to enter into a grant or other mechanism  
31 to provide for payment of CDPHE's costs relating to the implementation of this Agreement,  
32 including any fees or other assessments that would otherwise be imposed under 6 CCR 1007-3.

33 74. Unless DOE and CDPHE have entered into a grant or other reimbursement mechanism as  
34 described in the preceding paragraph, and DOE provides funding as specified in such grant or

# ***DRAFT ROCKY FLATS LEGACY MANAGEMENT AGREEMENT***

1 mechanism, DOE agrees to pay CDPHE, in full, and no later than 30 days after receipt of invoice, all  
2 document review fees and annual waste fees as required by 6 CCR 1007-3. DOE may contest  
3 charges in accordance with the dispute resolution procedures of part 7.

## **4 PART 15 OTHER CLAIMS**

5 75. Nothing in this Agreement shall constitute or be construed as a bar or release from any claim,  
6 cause of action, or demand in law or equity by or against any person, firm, partnership, or  
7 corporation, including any DOE or predecessor agency contractor, subcontractor, and/or operator,  
8 either past or present, for any liability it may have arising out of or relating in any way to the  
9 generation, storage, treatment, handling, transportation, release, or disposal of any hazardous  
10 substances, hazardous wastes, pollutants, or contaminants found at, taken to, or taken from the Site.

11 76. This Agreement does not constitute any decision on pre-authorization of funds under section  
12 111(a)(2) of CERCLA, 42 U.S.C. § 9611(a)(2).

13 77. Neither EPA nor CDPHE shall be held as a party to any contract entered into by DOE to  
14 implement the requirements of this Agreement.

## **15 PART 16 PUBLIC COMMENT PERIOD/EFFECTIVE DATE**

16 78. Within 15 days after all Parties have approved a draft version of this Agreement to be released for  
17 public review and comment, or as soon thereafter as possible, DOE shall notify the public of  
18 the availability of the Draft Agreement for review and comment during the period ending 45 days  
19 after notification is published. Such notification shall be published in at least two major newspapers,  
20 shall include information about the purpose of this agreement, how and where copies of the Draft  
21 Agreement will be made available for review, and the address to which comments may be submitted.  
22 Within 21 days after completion of the public comment period, DOE shall deliver to the other Parties  
23 copies of all comments received, and the Parties shall thereafter review the comments and confer for  
24 the purpose of addressing the comments and incorporating such changes in the Draft Agreement as  
25 may be appropriate based on their consideration of these comments. The final version of the  
26 Agreement shall become effective in accordance with the provisions of this Part.

27 79. The effective date of this Agreement shall be the date on which the last Party signs this  
28 Agreement.

## **29 PART 17 APPROVAL OF AGREEMENT**

30 80. Each undersigned representative of a Party certifies that he or she is fully authorized to enter into  
31 this Agreement and to legally bind such Party to this Agreement.

32

33

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# *DRAFT ROCKY FLATS LEGACY MANAGEMENT AGREEMENT*

1

2 \_\_\_\_\_

3 Dennis Ellis, Executive Director

4 Colorado Department of Public Health and Environment

5

6

7 \_\_\_\_\_

8 Mike Owen, Director

9 Office of Legacy Management

10 U.S. Department of Energy

11

12

13

14 \_\_\_\_\_

15 Robert E. Roberts, Regional Administrator

16 Region 8, Environmental Protection Agency

17

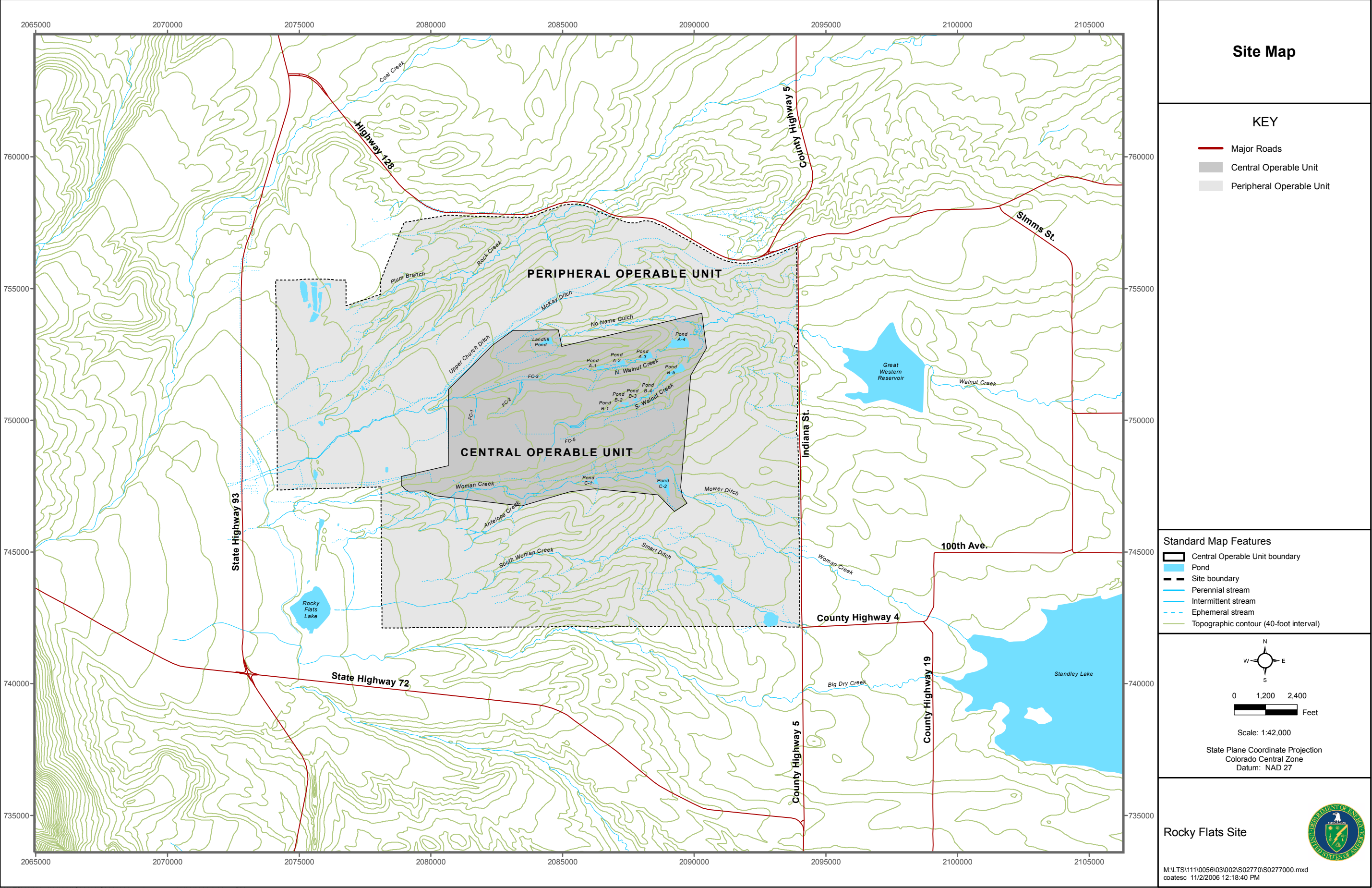
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## **Attachment 1**

### **Site Map**





Site Map

KEY

- Major Roads
- Central Operable Unit
- Peripheral Operable Unit

Standard Map Features

- Central Operable Unit boundary
- Pond
- Site boundary
- Perennial stream
- Intermittent stream
- Ephemeral stream
- Topographic contour (40-foot interval)



0 1,200 2,400  
Feet

Scale: 1:42,000

State Plane Coordinate Projection  
Colorado Central Zone  
Datum: NAD 27

Rocky Flats Site



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coatesc 11/2/2006 12:18:40 PM

## **Attachment 2**

### **Legacy Management Requirements**

**Table of Contents**

1.0	Purpose and Background
2.0	Remedy Performance Standards and Requirements
3.0	Physical Controls
4.0	Institutional Controls
5.0	Monitoring Requirements
6.0	Action Determinations
7.0	Periodic Reporting Requirements

**Tables**

Table 1	Surface Water Standards
Table 2	Water Monitoring Locations and Sampling Criteria
Table 3	Present and Original Landfill Inspection and Maintenance Requirements
Table 4	Institutional Controls for the Central Operable Unit
Table 5	Ecological Sampling

**Figures**

Figure 1	Water Monitoring Locations
Figure 2	Composite Plume Map
Figure 3	Subsurface Features – Remaining Infrastructure
Figure 4	Subsurface Features – Pits and Trenches
Figure 5	Points of Compliance
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Figure 9	Evaluation Wells
Figure 10	RCRA Wells
Figure 11	Groundwater Treatment Systems
Figure 12	Original Landfill Surface Water
Figure 13	Pre-discharge Pond Sampling

## **1.0 PURPOSE AND BACKGROUND**

The purpose of this attachment to the Rocky Flats Legacy Management Agreement (RFLMA) is to specify the legacy management requirements that will ensure the response action selected and approved in the final Corrective Action Decision and Record of Decision (CAD/ROD) for the Central Operable Unit (OU) remains protective of human health and the environment. The remedy specified in the final CAD/ROD is supported by a Comprehensive Risk Assessment, which is based on a specific land use. The remedy, therefore, relies on certain physical and institutional controls, which must be maintained to ensure long-term protectiveness. The remedy also includes engineered features – landfills and water treatment systems – which must be maintained to remain protective. Reduced levels of residual soil contamination remain at the site and may continue to affect surface water. Contaminated groundwater also exists at the site and may impact surface water quality. Continued routine monitoring for groundwater and surface water is therefore required. Air, soil, and ecological receptors have been extensively monitored for many years and routine monitoring is no longer required.

Legacy management requirements described in this attachment are intended to address the requirements of the following statutes:

- Resource Conservation and Recovery Act (RCRA);
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) including applicable or relevant and appropriate requirements (ARARs); and
- Colorado Hazardous Waste Act (CHWA).

Modifications to this attachment will occur in accordance with the provisions of Part 10 of RFLMA.

## **2.0 REMEDY PERFORMANCE STANDARDS AND REQUIREMENTS**

Remedy performance standards and requirements are enforceable numerical values or narrative descriptions of conditions or restrictions, designed to protect existing or potential uses, against which remedy performance can be measured. These standards and requirements are derived from state surface water standards and from requirements established in the final CAD/ROD.

### **2.1 Surface Water Standards**

Protection of surface water was a basis for making soil and groundwater response action decisions during the cleanup period so that surface water on site and leaving the site would be of sufficient quality to support all uses. The applicable surface water uses are consistent with the following Colorado Water Quality Control Commission (WQCC) surface water use classifications:

- Water Supply,
- Aquatic Life – Warm 2,

- Recreation 2, and
- Agriculture.

The remedy performance standards for surface water at the Rocky Flats Site are found in Table 1 and are based on the tables found in the WQCC Regulation No. 31: Basic Standards and Methodologies for Surface Water (5 CCR 1002-31) and on the site-specific standards in the WQCC Regulations No. 38 (5 CCR 1002-38). If the numeric values from the basic standards and the site-specific standards differ, the site-specific standard applies, except where temporary modifications are in place. Temporary modifications for six organic compounds, nitrate and nitrite, as listed in Table 1, have been granted through the year 2009 by the WQCC. In addition to practical quantitation levels (PQLs) allowed by the WQCC regulations, site-specific PQLs may be proposed to Colorado Department of Public Health and Environment (CDPHE) for approval. Any changes to the standards will be discussed in the annual legacy management report.

The WQCC-designated groundwater use classification at the site is surface water protection. The numeric values for measuring potential effects of contaminated groundwater on surface water quality are the surface water standards in Table 1. Exceedances of water quality standards at a surface water POC may be subject to civil penalties under Sections 109 and 310(c) of CERCLA.

Criteria and strategies for comparing analytical results to these numeric values are established in Section 5 and in attached flowcharts.

### **2.2 Requirements of the Final CAD/ROD**

Some response actions taken under Rocky Flats Cleanup Agreement decision documents specified conditions or restrictions that extend into the legacy management period. These requirements are captured in the final CAD/ROD and are specified in this attachment.

## **3.0 PHYSICAL CONTROLS**

### **3.1 Engineered Remedies**

DOE will maintain physical controls as necessary to protect engineered elements of the remedy, such as landfill covers, groundwater treatment systems, and monitoring equipment.

### **3.2 Signs**

DOE will post signs legible from at least 25 feet at intervals around the perimeter of the Central OU, sufficient to notify persons that they are at the boundary of the Central OU. These signs will measure at least 11 inches by 14 inches and will include the following language: “U.S. Department of Energy – No Trespassing”. In addition, signs listing use restrictions and providing contact information will be posted at access points to the Central OU.

#### **4.0 INSTITUTIONAL CONTROLS**

Institutional controls in the form of use restrictions are established in the final CAD/ROD. These controls are embodied in an environmental covenant granted by DOE to the CDPHE and are listed in Table 4. The covenant is recorded by Reception Number \_\_\_ in Jefferson County, Colorado.

DOE will employ administrative procedures to control all site modification, maintenance, or other activities requiring excavation within the Central OU in accordance with the institutional controls to ensure to prevent violation of the restrictions listed in Table 4. DOE shall ensure that all such site activities will not compromise the integrity or function of the remedy or result in uncontrolled releases of or exposures to subsurface contamination, in accordance with the land use restrictions in Table 4.

DOE will utilize work control procedures to help maintain the use restrictions and ensure protection of the integrity of the institutional controls. These procedures derive from EPA and State of Colorado regulation and guidance and DOE Orders and guidance. The DOE Integrated Safety Management System (ISMS) utilizes processes such as the job hazard analysis (JHA) to identify and mediate environmental, health and safety risks to ensure all work is done in a safe and environmentally protective manner.

#### **5.0 MONITORING REQUIREMENTS**

Monitoring will provide measurements for remedy performance, safety, compliance with standards, and effectiveness of physical and institutional controls. Monitoring requirements are designed to provide data that meet designated monitoring objectives (as outlined in Table 2 and in attached flowcharts) and that support operational and regulatory decision making. Legacy Management operational documents relating to the monitoring and maintenance performed by DOE will be provided to CDPHE and the Environmental Protection Agency (EPA) and will be available to the public.

Environmental sampling, analysis, and data management required by this attachment will conform to the Legacy Management CERCLA Sites Quality Assurance Project Plan (QAPP) and meet the quality assurance and quality control requirements in current EPA guidance. DOE will submit the QAPP to the CDPHE and EPA within two months of execution of the RFLMA. DOE will ensure that laboratories generating data have procedures for assuring that the precision, accuracy, representativeness, completeness, and comparability (and sensitivity in the case of radiological analyses) of data are known and documented. DOE will also perform periodic assessments of analytical data, including laboratory audits. Upon request, all analytical data including QA/QC procedures, audits, and reports will be provided to CDPHE and/or EPA.

Standard EPA analytical methods will be used with the intent that detection limits will be less than the respective standards. If standard analytical methods cannot attain the standard,

then alternative methods or PQLs will be proposed to CDPHE. The currently accepted PQLs are listed in Table 1.

### **5.1 Monitoring Surface Water**

Compliance with the surface-water standards in Table 1 will be measured at the Points of Compliance (POCs) downstream of the terminal ponds in Woman and Walnut Creeks. If the terminal ponds are removed, new monitoring and compliance points will be designated and will consider groundwater in alluvium. Points of Evaluation (POEs) and additional performance monitoring locations serve to monitor the quality of surface water in the Central OU. The data evaluation methods described in the attached flowcharts will be used to evaluate sampling data collected at these locations. POCs, POEs and performance monitoring locations are shown in Figure 1; sampling criteria are identified in Table 2.

- **Points of Compliance (POCs):** Located in Woman and Walnut Creeks downstream of the terminal ponds and at Indiana Street. These locations are used to demonstrate compliance with the surface-water standards in Table 1.
- **Points of Evaluation (POEs):** Located in the Central OU upstream of the ponds and POCs. These locations are used to evaluate water-quality in comparison to the surface-water standards in Table 1.
- **Performance monitoring locations:** Located downstream of specific remedies to determine the short and long-term effectiveness of these remedies where known contaminants may affect surface water.

### **5.2 Monitoring Groundwater**

Groundwater is monitored in or near areas of groundwater contamination that might adversely affect surface water quality (Figure 2). Contaminated groundwater emerges to surface water before leaving the Central OU. DOE will maintain a network of groundwater monitoring wells to assess the potential effects of contaminated groundwater on surface water quality. These wells and sampling criteria are identified in Table 2 and shown in Figure 1 with the following well classifications:

- **Area of Concern (AOC) Wells:** Located within a drainage and downgradient of a contaminant plume or group of contaminant plumes. These wells are monitored to determine whether the plume(s) may be discharging to surface water.
- **Sentinel Wells:** Typically located near downgradient edges of contaminant plumes, in drainages, and downgradient of groundwater treatment systems. These wells are monitored to determine whether concentrations of contaminants are increasing, which could indicate plume migration or treatment system problems.
- **Evaluation Wells:** Typically located within plumes and near plume source areas, or in the interior of the Central OU. Data from these wells will help determine when monitoring of an area or plume can cease. A subset of these wells is located in areas that may experience significant changes in groundwater conditions as a result of closure activities.

- RCRA Wells: Dedicated to monitoring the Present Landfill and Original Landfill.

### **5.3 Remedy Monitoring and Maintenance**

#### **5.3.1 Original Landfill**

Groundwater and surface water monitoring details, including criteria and analytes, are listed in Table 2. Table 3 summarizes the inspection and maintenance requirements contained in the *Final Landfill Monitoring and Maintenance Plan, RFETS, Original Landfill*, DOE, 2006, which is incorporated by reference as an enforceable requirement of the RFLMA.

#### **5.3.2 Present Landfill**

Groundwater and surface water monitoring details, including criteria and analytes, are listed in Table 2. Table 3 summarizes the inspection and maintenance requirements contained in the *Present Landfill Monitoring and Maintenance Plan and Post-Closure Plan, RFETS*, DOE 2006, which is incorporated by reference as an enforceable requirement of the RFLMA.

#### **5.3.3 Groundwater Treatment Systems**

Each system will be monitored, at a minimum, for untreated influent and treated effluent, and for impacts to surface water downstream of the effluent discharge point according to the sampling criteria in Table 2 and the decision rules in the attached flowcharts. The systems will be maintained to ensure the effluent meets Table 1 standards.

#### **5.3.4 Residual Subsurface Contamination**

The Central OU will be monitored for significant erosion annually and following major precipitation events. DOE will evaluate whether the erosion is in proximity to the subsurface features shown in Figures 3 and 4. Monitoring will include visual observation (and measurements, if necessary) of precursor evidence of significant erosion (cracks, rills, slumping, subsidence, sediment deposition, etc.).

#### **5.3.5 Monitoring Physical Controls**

The condition of signs and other physical controls maintained by DOE will be inspected on a quarterly basis.

#### **5.3.6 Monitoring Institutional Controls**

The effectiveness of the institutional controls described in Table 4 of this attachment and in the Environmental Covenant will be determined by inspecting the Central OU at least annually for any evidence of violations of those controls. DOE will also annually verify that



the Environmental Covenant for the Central OU remains in the Administrative Record and on file with the Jefferson County Planning and Zoning Department.

#### **5.3.7 Ecological Sampling**

The Ecological Risk Assessment determined that residual contamination does not represent a significant risk of adverse ecological effects. The CAD/ROD, however, requires that specific additional sampling be conducted to reduce the uncertainties determined in the Ecological Risk Assessment. Additional ecological sampling is listed in Table 5.

### **5.4 Operational Monitoring**

Operational monitoring is not a requirement of the CAD/ROD, but is a requirement of this Attachment. Operational monitoring provides information that will supplement CAD/ROD required monitoring.

#### **5.4.1 Boundary Wells**

Boundary wells are located on the east boundary of the Rocky Flats Site (see Figure 1) where Walnut Creek and Woman Creek exit Rocky Flats. These wells are used to demonstrate that contaminants listed in Table 2 are not migrating offsite. Action determinations for Boundary wells are found in Figure 7.

#### **5.4.2 Pre-discharge Pond Sampling**

DOE will collect pre-discharge samples from Pond A-4, Pond B-5, and Pond C-2, and as needed from any other upstream pond temporarily functioning as a terminal pond. DOE will notify appropriate parties in accordance with Figure 13 in advance of pre-discharge pond sampling. CDPHE and EPA will be allowed the opportunity to collect duplicate or split samples. Samples will be analyzed for POC constituents far enough in advance of a routine discharge to allow action to be taken if exceedances are suggested, but near enough to the time of discharge to be representative of the discharge composition. Figure 13 shows how actions are determined based on the results of pre-discharge samples. Ponds will be operated to maintain dam safety regardless of the status or results of pond sampling.

#### **5.4.3 Adverse Biological Conditions**

DOE will note evidence of adverse biological conditions (e.g., unexpected mortality or morbidity) observed during other monitoring and maintenance activities described above.

## **6.0 ACTION DETERMINATIONS**

Whenever any of the following reportable conditions are observed, DOE shall follow the appropriate procedures in this section. Reportable conditions include:

- Exceedances of surface water standards at surface water and groundwater monitoring locations consistent with the attached flowcharts;
- Evidence of significant erosion in areas of residual subsurface contamination;
- Evidence of adverse biological conditions;
- Conditions affecting the effectiveness of the landfill covers;
- Evidence of violation of the institutional controls;
- Physical control failure that adversely affects the remedy; or
- Other abnormal conditions that adversely affect the remedy.

When reportable conditions occur (except in the case of evidence of violation of institutional controls as described below), DOE will inform CDPHE and EPA within 15 days of receiving the inspection reports or validated data. Within 30 days of receiving inspection reports or validated analytical data documenting a reportable condition, DOE will submit a plan and a schedule for an evaluation to address the condition. DOE will consult as described in RFLMA Paragraph 11 to determine if mitigating actions are necessary. Final plans and schedules for mitigating actions, if any, will be approved by CDPHE in consultation with EPA. DOE is not, however, precluded from undertaking timely mitigation once a reportable condition has been identified.

In the case of evidence of violation of institutional controls, DOE will notify EPA and CDPHE within 2 days of discovering any evidence of such a violation, and at that time will initiate the consultative process to address the situation. In no case will DOE notify EPA and CDPHE more than 10 days after the discovery of a situation that may interfere with the effectiveness of the institutional controls. DOE will notify EPA and CDPHE of the actions it is taking within 10 days after beginning the process to address the situation.

The RFLMA Parties will consult whenever reportable conditions are observed or at the request of one of the Parties when routine communication processes are not sufficient or appropriate. The objective of the consultation will be to determine a course of action to address the reportable condition and to ensure the remedy remains protective. Results of consultation will be documented in contact records and/or written correspondence.

Surface water and groundwater monitoring results will be evaluated as described in the following flowcharts:

- Figure 5 Flowchart – Points of Compliance
- Figure 6 Flowchart – Points of Evaluation
- Figure 7 Flowchart – Area of Concern Wells, Boundary Wells, and SW018

- Figure 8 Flowchart – Sentinel Wells
- Figure 9 Flowchart – Evaluation Wells
- Figure 10 Flowchart – RCRA Wells
- Figure 11 Flowchart – Groundwater Treatment Systems
- Figure 12 Flowchart – Original Landfill Surface Water
- Figure 13 Flowchart – Pre-discharge Pond Sampling

Exceedances of water quality standards at a POC may be subject to civil penalties under Sections 109 and 310(c) of CERCLA. In addition, failure of DOE to notify the State and EPA of such exceedances or other reportable occurrences, or failure to undertake source evaluations or mitigating actions as described above, will be enforceable consistent with the terms of Part 8 of the RFLMA.

## **7.0 PERIODIC REPORTING REQUIREMENTS**

In addition to notifications of reportable conditions described in Section 6, periodic reporting will provide CDPHE, EPA, and the public with updated information pertaining to the surveillance and maintenance of the remedy prescribed in the final CAD/ROD. Analytical data and other information will be clearly presented along with summaries and evaluations to help interpret the data. Reports will be posted on the LM website and available for regulatory and public review in accordance with the following schedule:

Quarter ending March 31 will be posted by July 15  
Quarter ending June 30 will be posted by October 15  
Quarter ending September 30 will be posted by January 15  
Year and Quarter ending December 31 will be posted by April 30

### **7.1 Quarterly Legacy Management Reports**

The various reporting requirements may be combined into a summary report of surveillance and maintenance activities that occurred during the applicable quarter. The following topics will be included in quarterly reports:

- Surface water monitoring data;
- Groundwater monitoring data;
- Groundwater treatment system monitoring data;
- Ecological sampling data;
- Adverse biological conditions;
- Inspection reports; and
- Summary of maintenance and repairs.

## **7.2 Annual Legacy Management Reports**

The various reporting requirements may be combined into a comprehensive report of all surveillance and maintenance activities that occurred during the applicable calendar year. Annual reports may include a summary for the previous quarter. The following will be included in annual reports:

- Discussion of surface water monitoring data;
- Discussion of groundwater monitoring data;
- Discussion of groundwater treatment system monitoring data;
- Discussion of ecological sampling data;
- Adverse biological conditions;
- Summary of actions taken in response to reportable conditions;
- Summary of maintenance and repairs;
- Inspection reports;
- Verification of the Environmental Covenant and evaluation of the effectiveness of institutional controls;
- Original Landfill Monitoring Report (see Table 3 and Section 6.1 of the Original Landfill Monitoring and Maintenance Plan); *Final Landfill Monitoring and Maintenance Plan, RFETS, Original Landfill, DOE 2006*.
- Present Landfill Monitoring Report (see Table 3 and Section 6.1 of the *Present Landfill Monitoring and Maintenance Plan and Post-Closure Plan, RFETS, DOE 2006*);
- Assessments of analytical data, including laboratory audits; and
- Other conditions or actions taken that are pertinent to the continued effectiveness of the remedy.

## **7.3 CERCLA 5-Year Review**

A statutory 5-year review is required under CERCLA for the Central OU because the selected remedy will result in hazardous substances, pollutants or contaminants remaining above levels that allow for unrestricted use and unlimited exposure. DOE will prepare the 5-year review consistent with EPA-OSWER Directive 9355.7-03B-P (or subsequent EPA directives), as applicable to Rocky Flats. DOE will submit the 5-year review to EPA by August 1, 2007 so as to allow for EPA approval by September 17, 2007. DOE will prepare subsequent reviews at five-year intervals from the aforementioned date, until such time as EPA determines that CERCLA periodic reviews are no longer required. The 5-year review will evaluate site conditions and determine whether the selected remedy remains protective of human health and the environment. In doing so, the 5-year review will evaluate the components of the remedy (including, but not limited to, requirements for monitoring, maintenance and inspections, institutional controls, and reporting.) The 5-year review will determine whether such remedy components will be continued, modified, or discontinued.

## *DRAFT ROCKY FLATS LEGACY MANAGEMENT AGREEMENT*

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The public will be notified when the review will be conducted. Results of 5-year reviews will be made available to the public.

# DRAFT ROCKY FLATS LEGACY MANAGEMENT AGREEMENT

Table 1. Surface Water Standards

Analyte	CAS Reference Number	Standards [a] (mg/L)	Basis [b]	Temporary Modifications [c] (mg/L)	PQLs [d] (mg/L)
Acenaphthene	83-32-9	4.20E-01	W+F, WS		
Acrolein	107-02-8	3.50E-03	W+F, WS		2.50E-02
Acrylamide	79-06-1	7.80E-06	WS		3.20E-04
Acrylonitrile	107-13-1	5.10E-05	W+F		2.50E-02
Alachlor	15972-60-8	2.00E-03	W+F, WS		
Aldicarb	116-06-3	7.00E-03	WS		
Aldicarb sulfone	1646-88-4	7.00E-03	WS		
Aldicarb sulfoxide	1646-87-3	7.00E-03	WS		
Aldrin	309-00-2	4.90E-08	W+F		5.00E-05
Ammonia, un-ionized	7664-41-7	[e]	[e]		
Aniline	62-53-3	6.10E-03	WS		1.00E-02
Anthracene	120-12-7	2.10E+00	W+F, WS		
Aramite	140-57-8	1.40E-03	WS		2.00E-02
Arsenic, total recoverable	7440-38-2	5.00E-02	SS		
Atrazine	1912-24-9	3.00E-03	WS		
Azobenzene	103-33-3	3.20E-04	WS		3.00E-02
Benzene	71-43-2	2.20E-03	W+F	5.00E-03	
Benzidine	92-87-5	8.60E-08	W+F		4.00E-02
alpha-BHC	319-84-6	2.60E-06	W+F		3.00E-05
beta-BHC	319-85-7	9.10E-06	W+F		6.00E-05
gamma-BHC [Lindane]	58-89-9	8.00E-05	AL		
Benzo(a)anthracene	56-55-3	3.80E-06	W+F		2.00E-02
Benzo(a)pyrene	50-32-8	3.80E-06	W+F		1.00E-02
Benzo(b)fluoranthene	205-99-2	3.80E-06	W+F		1.00E-02
Benzo(g,h,i)perylene	191-24-2	3.80E-06	W+F		1.00E-02
Benzo(k)fluoranthene	207-08-9	3.80E-06	W+F		1.00E-02
Benzotrichloride	98-07-7	2.70E-06	WS		1.00E-02
Benzyl chloride	100-44-7	2.10E-04	WS		1.00E-03
Beryllium	7440-41-7	4.00E-03	SS		
Boron, total	7440-42-8	7.50E-01	AG, SS		
Bromate	15541-45-4	5.00E-05	WS		1.00E-03
Bromodichloromethane	75-27-4	5.50E-04	W+F [f]		1.00E-03
Bromoform [Tribromomethane]	75-25-2	4.30E-03	W+F [f]		
Bromomethane [Methyl Bromide]	74-83-9	9.80E-04	W+F		1.00E-03
Butylbenzylphthalate	85-68-7	1.40E+00	W+F, WS		
Cadmium, dissolved	7440-43-9	1.50E-03	TVS [g]		
Carbofuran	1563-66-2	4.00E-02	WS		
Carbon tetrachloride	56-23-5	2.30E-04	W+F	5.00E-03	1.00E-03
Chlordane	57-74-9	8.00E-07	W+F		2.00E-04
Chlorobenzene	108-90-7	1.00E-01	W+F, WS		
Chlorodibromomethane (HM)	124-48-1	5.40E-02	W+F		
bis(2-Chloroethyl)ether	111-44-4	3.00E-05	W+F		1.00E-02
Chloroform [Trichloromethane]	67-66-3	3.40E-03	W+F [f]		
bis(2-Chloroisopropyl)ether	108-60-1	2.80E-01	W+F, WS		
Chloromethane [Methyl chloride]	74-87-3	5.60E-03	W+F		

# DRAFT ROCKY FLATS LEGACY MANAGEMENT AGREEMENT

Table 1 (continued). Surface Water Standards

Analyte	CAS Reference Number	Standards [a] (mg/L)	Basis [b]	Temporary Modifications [c] (mg/L)	PQLs [d] (mg/L)
Bis(chloromethyl)ether (BCME)	542-88-1	1.00E-07	W+F		1.00E-02
4-Chloro-3-methylphenol	59-50-7	3.00E-02	AL		
Chloronaphthalene	91-58-7	5.60E-01	W+F, WS		
2-Chlorophenol	95-57-8	3.50E-02	W+F, WS		
Chlorpyrifos	2921-88-2	4.10E-05	AL		5.00E-03
Chromium III, Total Recoverable	16065-83-1	5.00E-02	SS		
Chromium VI, dissolved	18540-29-9	1.10E-02	TVS [g]		2.00E-02
Chrysene	218-01-9	3.80E-06	W+F		1.00E-02
Copper, dissolved	7440-50-8	1.60E-02	TVS [g]		2.50E-02
Cyanide	57-12-5	5.00E-03	SS		
4,4-DDD	72-54-8	3.10E-07	W+F		1.10E-04
4,4-DDE	72-55-9	2.20E-07	W+F		5.00E-05
4,4-DDT	50-29-3	2.20E-07	W+F		1.20E-04
Dalapon	75-99-0	2.00E-01	WS		
Demeton	8065-48-3	1.00E-04	AL		1.00E-02
Dibenzo(a,h)anthracene	53-70-3	3.80E-06	W+F		1.00E-02
Dibromochloromethane	124-48-1	8.00E-02	W+F, WS [f]		
1,2-Dibromo-3-chloropropane	96-12-8	2.00E-04	WS		1.00E-03
Di-n-butylphthalate	84-74-2	7.00E-01	W+F, WS		
Dichloroacetic acid	79-43-6	7.00E-04	WS		5.00E-04
1,2-Dichlorobenzene	95-50-1	4.20E-01	W+F		
1,3-Dichlorobenzene	541-73-1	9.40E-02	W+F, WS		
1,4-Dichlorobenzene	106-46-7	6.30E-02	W+F		
3,3-Dichlorobenzidine	91-94-1	2.10E-05	W+F		2.00E-02
1,2-Dichloroethane	107-06-2	3.80E-04	W+F	5.00E-03	1.00E-03
1,1-Dichloroethene	75-35-4	7.00E-03	W+F, WS	7.00E-03	
1,2-Dichloroethene (cis)	156-59-2	7.00E-02	WS		
1,2-Dichloroethene (trans)	156-60-5	1.00E-01	W+F, WS		
2,4-Dichlorophenol	120-83-2	2.10E-02	W+F, WS		
Dichlorophenoxyacetic acid [2,4-D]	94-75-7	7.00E-02	WS		
1,2-Dichloropropane	78-87-5	5.00E-04	W+F		1.00E-02
1,3-Dichloropropylene	542-75-6	3.40E-04	W+F		1.00E-02
Dichlorvos	62-73-7	1.20E-04	WS		1.00E-02
Dieldrin	60-57-1	5.20E-08	W+F		2.00E-05
Di(2-ethylhexyl)adipate	103-23-1	4.00E-01	WS		
Diethylphthalate	84-66-2	5.60E+00	W+F, WS		
Diisopropyl methyl phosphonate	1445-75-6	8.00E-03	WS		1.00E-02
2,4-Dimethylphenol	105-67-9	1.40E-01	W+F, WS		
Dimethylphthalate	131-11-3	7.00E+01	W+F, WS		
4,6-Dinitro-2-methylphenol	534-52-1	2.70E-04	WS		5.00E-02
2,4-Dinitrophenol	51-28-5	1.40E-02	W+F, WS		5.00E-02
2,4-Dinitrotoluene	121-14-2	1.10E-04	W+F, WS		1.00E-02
2,6-Dinitrotoluene	606-20-2	2.30E-01	AL		
Dinoseb	88-85-7	7.00E-03	WS		

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Table 1 (continued). Surface Water Standards

Analyte	CAS Reference Number	Standards [a] (mg/L)	Basis [b]	Temporary Modifications [c] (mg/L)	PQLs [d] (mg/L)
1,4-Dioxane	123-91-1	6.10E-03	WS [m]		1.00E-02
Dioxin (2,3,7,8 TCDD)	1746-01-6	5.00E-12	W+F		1.00E-05
1,2-Diphenylhydrazine	122-66-7	3.60E-05	W+F		1.00E-02
Diquat	85-00-7	2.00E-02	WS		
Endosulfan	115-29-7	5.60E-05	AL		
Endosulfan, alpha	959-98-8	5.60E-05	AL		2.00E-04
Endosulfan, beta	33213-65-9	5.60E-05	AL		
Endosulfan sulfate	1031-07-8	5.60E-05	AL		6.60E-04
Endothall	145-73-3	1.00E-01	WS		
Endrin (technical)	72-20-8	3.60E-05	AL		6.00E-05
Endrin aldehyde	7421-93-4	2.90E-04	W+F		
Epichlorohydrin	106-89-8	3.50E-03	WS		1.00E-02
Ethylbenzene	100-41-4	5.30E-01	W+F		
Ethylene dibromide [1,2-Dibromomethane]	106-93-4	5.00E-05	WS		1.00E-03
bis(2-Ethylhexyl)phthalate	117-81-7	1.20E-03	W+F		1.00E-02
Fluoranthene	206-44-0	1.30E-01	W+F		
Fluorene	86-73-7	2.80E-01	WS		
Folpet	133-07-3	1.00E-02	WS		
Furmecyclox	60568-05-0	1.20E-03	WS		1.00E-02
Glyphosate	1071-83-6	7.00E-01	WS		
Guthion	86-50-0	1.00E-05	AL		1.00E-01
Heptachlor	76-44-8	7.80E-08	W+F		5.00E-05
Heptachlor epoxide	1024-57-3	3.90E-08	W+F		1.00E-03
Hexachlorobenzene	118-74-1	2.80E-07	W+F		1.00E-02
Hexachlorobutadiene	87-68-3	4.40E-04	W+F		5.00E-03
Hexachlorocyclohexane, Technical	608-73-1	1.20E-05	W+F		1.00E-02
Hexachlorocyclopentadiene	77-47-4	5.00E-03	AL		1.00E-02
Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-hcdd)	19408-74-3	5.60E-09	WS		2.50E-05
Hexachloroethane	67-72-1	4.00E-04	W+F		1.00E-03
Hydrazine/Hydrazine sulfate	302-01-2	1.20E-05	WS		1.00E-02
Indeno(1,2,3-cd)pyrene	193-39-5	3.80E-06	W+F		1.00E-02
Isophorone	78-59-1	1.30E-01	W+F		
Lead, dissolved	7439-92-1	6.50E-03	TVS [g]		
Malathion	121-75-5	1.00E-04	AL		1.00E-02
Mercury, total	7439-97-6	1.00E-05	SS		1.00E-03
Methoxychlor	72-43-5	3.00E-05	AL		1.80E-03
4,4-Methylene bis (N,N'- dimethyl)aniline	101-61-1	7.60E-04	WS		1.00E-02
Methylene chloride [Dichloromethane]	75-09-2	4.60E-03	W+F		
Mirex	2385-85-5	1.00E-06	AL		1.00E-02
Naphthalene	91-20-3	1.40E-01	W+F, WS		
Nickel, dissolved	7440-02-0	1.23E-01	TVS [g]		
Nitrate	14797-55-8	1.00E+01	AG, SS	100 [h]	



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Table 1 (continued). Surface Water Standards

Analyte	CAS Reference Number	Standards [a] (mg/L)	Basis [b]	Temporary Modifications [c] (mg/L)	PQLs [d] (mg/L)
Nitrite	14797-65-0	5.00E-01	AL [i], SS	4.5 [h]	
Nitrobenzene	98-95-3	3.50E-03	W+F, WS		
Nitrophenol 4	100-02-7	5.60E-02	WS, W+F		
Nitrosodibutylamine N	924-16-3	4.30E-06	W+F		1.00E-02
N-Nitrosodiethanolamine	1116-54-7	1.30E-05	WS		1.00E-02
Nitrosodiethylamine N	55-18-5	2.30E-07	W+F, WS		1.00E-02
Nitrosodimethylamine N	62-75-9	6.90E-07	W+F, WS		2.00E-02
n-Nitrosodiphenylamine	86-30-6	3.30E-03	W+F		1.00E-02
n-Nitrosodipropylamine	621-64-7	5.00E-06	W+F, WS		1.00E-02
N-Nitroso-N-methylethylamine	10595-95-6	1.60E-06	WS		1.00E-02
Nitrosopyrrolidine N	930-55-2	1.60E-05	W+F		4.00E-02
Oxamyl(vydate)	23135-22-0	2.00E-01	WS		
PCBs	1336-36-3	6.40E-08	W+F [j]		5.00E-04
Parathion	56-38-2	1.30E-05	AL		1.00E-02
Pentachlorobenzene	608-93-5	1.40E-03	W+F		1.00E-02
Pentachlorophenol	87-86-5	2.70E-04	W+F		5.00E-02
Phenol	108-95-2	2.10E+00	W+F, WS		
Picloram	1918-02-1	4.90E-01	WS		
Propylene oxide	75-56-9	1.50E-04	WS		1.00E-02
Pyrene	129-00-0	2.10E-01	W+F, WS		
Quinoline	91-22-5	1.20E-05	WS		
Selenium	7782-49-2	4.60E-03	AL		
Silver, dissolved	7440-22-4	6.00E-04	TVS [g]		1.00E-03
Simazine	122-34-9	4.00E-03	WS		
Sulfide	18496-25-8	2.00E-03	SS		
Styrene	100-42-5	1.00E-01	WS		
1,2,4,5-Tetrachlorobenzene	95-94-3	9.70E-04	W+F		1.00E-03
1,1,2,2-Tetrachloroethane	79-34-5	1.70E-04	W+F		1.00E-03
Tetrachloroethene	127-18-4	6.90E-04	W+F	5.00E-03	1.00E-03
Toluene	108-88-3	1.00E+00	W+F, WS		
Toxaphene	8001-35-2	2.00E-07	AL		2.50E-03
Tributyltin (TBT)	56573-85-4	7.20E-05	AL		1.00E-02
1,2,4-Trichlorobenzene	120-82-1	3.50E-02	W+F		
1,1,1-Trichloroethane	71-55-6	2.00E-01	WS		
1,1,2-Trichloroethane	79-00-5	2.70E-03	W+F		
Trichloroethene	79-01-6	2.50E-03	W+F	5.00E-03	
2,4,6-Trichlorophenol	88-06-2	1.40E-03	W+F		1.00E-02
Trichlorophenol 2,4,5	95-95-4	7.00E-01	WS, W+F		
Trichlorophenoxypropionic acid	93-72-1	5.00E-02	WS		
Vinyl chloride	75-01-4	2.30E-05	W+F		2.00E-04
Xylene (total)	1330-20-7	1.00E+01	WS		
Zinc, dissolved	7440-66-6	1.41E-01	TVS [g]		
<b>PHYSICAL PARAMETERS:</b>					
Dissolved oxygen (minimum)		5.0 mg/L	SS		
pH		6.5-9.0	SS		

# DRAFT ROCKY FLATS LEGACY MANAGEMENT AGREEMENT

Table 1 (continued). Surface Water Standards

Analyte	CAS Reference Number	Standards [a] (mg/L)	Basis [b]	Temporary Modifications [c] (mg/L)	PQLs [d] (mg/L)
<b>RADIONUCLIDES (pCi/L)</b>					
Americium 241	14596-10-2	0.15	BS		
Plutonium 239/240	10-12-8	0.15	BS		
Radium 226/228		5 [k]	BS		
Strontium 89/90	11-10-9	8	BS		
Tritium	10028-17-8	500	SS		
Uranium, total	7440-61-1	11(10) [l]	SS		
Gross alpha, total	14127-62-9	7(11) [l]	SS		
Gross beta, total	12587-47-2	8(19) [l]	SS		

**NOTES:**

[a] The values in this table reflect the classifications and standards approved by the Colorado WQCC effective December 31, 2005. Standards for chloride, dissolved iron, dissolved manganese, and sulfate are Secondary Drinking Water Standards, which are based on aesthetic considerations. They have been removed as site-specific standards since Segments 4a, 4b, and 5 waters will not be used for drinking water supply.

[b] Acronyms: AG = Agriculture; AL = Aquatic Life; BS = Basic Standard; PRG = Preliminary Remediation Goal for residential groundwater ingestion; SS = Site Specific Standard; TVS = Table Value Standard; WS = Water Supply; W+F = Water plus Fish

[c] Temporary modifications affect Segment 5 only and apply until December 31, 2009.

[d] Whenever the practical quantitation level (PQL) for a pollutant is higher (less stringent) than a standard or temporary modification, "less than" the PQL will be used as the compliance threshold.

[e] There is no un-ionized ammonia standard for Segment 5 or Segment 4b. A standard of 0.1 mg/L applies to Segment 4a, which begins in Walnut Creek downstream of Indiana Street.

[f] Per the Basic Standards, the Total Trihalomethane (TTHM) standard applies to the sum of the four TTHM compounds. For dibromochloromethane the TTHM value for water supply, 80 parts per billion, was applied.

[g] Table value standards for metals are based on a toxicity equation which uses a hardness value of 143 mg/L.

[h] The temporary modifications for nitrate and nitrite apply to the Walnut Creek portions of Segment 5 only.

[i] The listed nitrite value is the chronic aquatic life standard based on chloride levels in excess of 22 mg/L in Segment 4.

[j] The total PCB standard in the Basic Standards is based on the sum of the Aroclor analytes.

[k] Per the basic standard, this value applies to the sum of the two radium isotopes.

[l] Radiological parameters are distinguished by drainage basin in Table 2 of 5 CCR 1002-38. The first value is the standard for Woman Creek and the parenthetical value is the standard for Walnut Creek.

[m] Effective through 3/21/2010; starting 3/22/2010 standard is 3.20E-03 mg/L

The scientific notation used in this table indicates the power of ten by which the two-decimal-place number is multiplied (e.g., 2.52E-02 = 2.52 X 10<sup>-2</sup> = .0252).

Table 2. Water Monitoring Locations and Sampling Criteria

General Objective	Classification	Media	Location ID (1)	Location Description	Frequency	Analytes (4)
<b>Points of Compliance (POCs)</b>						
	POC (5)	SW	GS01	Woman Creek at Indiana Street	Flow-paced (varies)	Pu, Am, isotopic U <sup>238</sup> , flow rate
	POC (5)	SW	GS03	Walnut Creek at Indiana Street	Flow-paced (varies)	Pu, Am, isotopic U <sup>238</sup> , nitrate (pond discharges only), flow rate
	POC (5)	SW	GS08	Pond B-5 outlet	Flow-paced (varies)	Pu, Am, isotopic U <sup>238</sup> , nitrate, flow rate
	POC (5)	SW	GS11	Pond A-4 outlet	Flow-paced (varies)	Pu, Am, isotopic U <sup>238</sup> , nitrate, flow rate
	POC (5)	SW	GS31	Pond C-2 outlet	Flow-paced (varies)	Pu, Am, isotopic U <sup>238</sup> , flow rate
<b>Points of Evaluation (POEs)</b>						
	POE (6)	SW	GS10	S. Walnut Creek at B-Series Bypass	Flow-paced (varies)	Pu, Am, isotopic U <sup>238</sup> , dissolved Ag and Cd, total Be and Cr, flow rate
	POE (6)	SW	SW027	SID at Pond C-2	Flow-paced (varies)	Pu, Am, isotopic U <sup>238</sup> , dissolved Ag and Cd, total Be and Cr, flow rate
	POE (6)	SW	SW093	N. Walnut Creek at end of FC-3	Flow-paced (varies)	Pu, Am, isotopic U <sup>238</sup> , dissolved Ag and Cd, total Be and Cr, flow rate
<b>Boundary Wells</b>						
	Boundary (7)	GW	10394	Woman Creek at Indiana Street	Annual	VOCs, U, nitrate
	Boundary (7)	GW	41691	Walnut Creek at Indiana Street	Annual	VOCs, U, nitrate
<b>Present Landfill (PLF) Area (2)</b>						
	RCRA (10)	GW	70193	Upgradient	Quarterly	VOCs, metals
	RCRA (10)	GW	70393	Upgradient	Quarterly	VOCs, metals
	RCRA (10)	GW	70693	Upgradient	Quarterly	VOCs, metals
	RCRA (10)	GW	73005	Downgradient	Quarterly	VOCs, metals
	RCRA (10)	GW	73105	Downgradient	Quarterly	VOCs, metals
	RCRA (10)	GW	73205	Downgradient	Quarterly	VOCs, metals
	AOC (7)	GW	4087	Below East Landfill Pond	Semiannual	VOCs, U, nitrate
	AOC (7)	GW	B206989	Below East Landfill Pond	Semiannual	VOCs, U, nitrate
	Treatment System (11)	GW	PLFSEEPINF	Seep influent to treatment system	Quarterly	VOCs, isotopic U <sup>238</sup> , metals, instantaneous flow rate
	Treatment System (11)	GW	GWISINFNORTH	North GWIS influent to treatment system	Quarterly	VOCs, isotopic U <sup>238</sup> , metals, nitrate
	Treatment System (11)	GW	GWISINF SOUTH	South GWIS influent to treatment system	Quarterly	VOCs, isotopic U <sup>238</sup> , metals, nitrate
	Treatment System (11)	SW	PLFSYSEFF	Treatment system effluent	Quarterly; Monthly (if required by decision)	VOCs, SVOCs, isotopic U <sup>238</sup> , metals
	Treatment System (11)	SW	PLFPONDEFF	East Landfill Pond at outlet	As required by decision rule	As required by decision rule
<b>Original Landfill (OLF) Area (3)</b>						
	RCRA (10)	GW	P416589	Upgradient	Quarterly	VOCs, metals, SVOCs
	RCRA (10)	GW	80005	Downgradient	Quarterly	VOCs, metals, SVOCs
	RCRA (10)	GW	80105	Downgradient	Quarterly	VOCs, metals, SVOCs
	RCRA (10)	GW	80205	Downgradient	Quarterly	VOCs, metals, SVOCs
	AOC (7)	GW	11104	Downgradient, downstream	Semiannual	VOCs, U
	OLF SW (12)	SW	GS05	Woman Creek at west property line (upstream)	Quarterly; Monthly (if required by decision)	VOCs, isotopic U <sup>238</sup> , metals
	OLF SW (12)	SW	GS59	Woman Creek 700 feet east of OLF (downstream)	Quarterly; Monthly (if required by decision)	VOCs, isotopic U <sup>238</sup> , metals
<b>Mound Site Plume and Treatment System (MSPTS)</b>						
	Evaluation (9)	GW	00897	Source area	Biennial	VOCs
	Sentinel (8)	GW	15699	Downgradient of intercept trench	Semiannual	VOCs
	Treatment System (11)	GW	MOUND R1-0	Treatment system influent	Semiannual	VOCs
	Treatment System (11)	GW	MOUND R2-E	Treatment system effluent	Semiannual	VOCs
	Treatment System (11)	SW	GS10	S. Walnut Creek at B-Series Bypass	Semiannual	VOCs

Table 2 (continued). Water Monitoring Locations and Sampling Criteria

General Objective	Classification	Media	Location ID (1)	Location Description	Frequency	Analytes (4)
<b>East Trenches Plume and Treatment System (ETPTS)</b>						
	Evaluation (9)	GW	3687	Source area	Biennial	VOCs
	Evaluation (9)	GW	05691	Source area	Biennial	VOCs
	Evaluation (9)	GW	03991	East of source area	Biennial	VOCs
	Sentinel (8)	GW	04091	East of source area	Semiannual	VOCs
	Sentinel (8)	GW	95299	Downgradient of intercept trench	Semiannual	VOCs
	Sentinel (8)	GW	95199	Downgradient of intercept trench	Semiannual	VOCs
	Sentinel (8)	GW	95099	Downgradient of intercept trench	Semiannual	VOCs
	Sentinel (8)	GW	23296	Downgradient of intercept trench	Semiannual	VOCs, U
	Sentinel (8)	GW	TH046992	Downgradient of intercept trench	Semiannual	VOCs
	Treatment System (11)	GW	ET INFLUENT	Treatment system influent	Semiannual	VOCs
	Treatment System (11)	GW	ET EFFLUENT	Treatment system effluent	Semiannual	VOCs
	Treatment System (11)	SW	POM2	S. Walnut Creek at Pond B-4 outlet	Semiannual	VOCs
<b>Solar Ponds Plume and Treatment System (SPPTS)</b>						
	Evaluation (9)	GW	P210189	VOC plume source area	Biennial	VOCs, U, nitrate
	Evaluation (9)	GW	79102	SPP source area - north	Biennial	VOCs, U, nitrate
	Evaluation (9)	GW	79202	SPP source area - north	Biennial	VOCs, U, nitrate
	Evaluation (9)	GW	P208989	SPP source area - north	Biennial	VOCs, U, nitrate
	Evaluation (9)	GW	79302	SPP source area - northeast	Biennial	U, nitrate
	Evaluation (9)	GW	79402	SPP source area - northeast	Biennial	U, nitrate
	Evaluation (9)	GW	79502	SPP source area - east	Biennial	U, nitrate
	Evaluation (9)	GW	79605	SPP source area - east	Biennial	U, nitrate
	Evaluation (9)	GW	00203	SPP source area - south	Biennial	VOCs, U, nitrate
	Evaluation (9)	GW	22205	SPP downgradient plume - north	Biennial	VOCs, U, nitrate
	Sentinel (8)	GW	P210089	SPP downgradient plume - north	Semiannual	VOCs, U, nitrate
	Sentinel (8)	GW	70099	Northwest of system	Semiannual	U, nitrate
	Treatment System (11)	GW	SPIN	Treatment system influent	Semiannual	U, nitrate
	Treatment System (11)	GW	SPPMM01	Treatment system effluent	Semiannual	U, nitrate
	Treatment System (11)	SW	GS13	N. Walnut Creek at A-Series Bypass	Semiannual	U, nitrate
	Evaluation (9)	GW	B210489	Downgradient of treatment system	Biennial	U, nitrate
	Evaluation (9)	GW	51605	Downgradient, adjacent to GS13	Biennial	U, nitrate

Table 2 (continued). Water Monitoring Locations and Sampling Criteria

General Objective	Classification	Media	Location ID (1)	Location Description	Frequency	Analytes (4)
<b>Other Areas of Interest</b>						
Rainages Below Impacted Areas	AOC (7)	GW	10594	N. Walnut Creek downstream of Pond A-1	Semiannual	VOCs, U, nitrate
	AOC (7)	GW	00997	S. Walnut Creek upstream of Pond B-5	Semiannual	VOCs, U, nitrate
	AOC (7)	GW	00193	Woman Creek upstream of Pond C-2	Semiannual	VOCs, U
Former Building 371/374	Sentinel (8)	GW	37505	North part of former B371 area	Semiannual	VOCs, U, nitrate
	Sentinel (8)	GW	37405	North/northeast part of former B371/374 area	Semiannual	VOCs, U, nitrate, Pu <sup>+</sup> , Am <sup>+</sup>
Former Building 771/774	Sentinel (8)	GW	37705	East/southeast of former B371/374 area at foundation drain confluence	Semiannual	VOCs, U, nitrate, Pu <sup>+</sup> , Am <sup>+</sup>
	Sentinel (8)	GW	20705	North/northwest of former B771 area	Semiannual	VOCs, U, nitrate, Pu <sup>+</sup> , Am <sup>+</sup>
	Sentinel (8)	GW	20505	North of former B771/774 area	Semiannual	VOCs, U, Pu <sup>+</sup> , Am <sup>+</sup>
Former North-Central IA	Sentinel (8)	GW	20205	North/northeast of former B771/774 area	Semiannual	VOCs, U, Pu <sup>+</sup> , Am <sup>+</sup>
	Evaluation (9)	GW	P114689	Southwest of former B559 area	Biennial	VOCs
	Evaluation (9)	GW	P115589	West part of former B551 Warehouse area	Biennial	VOCs
	Evaluation (9)	GW	70705	East part of former B707 area	Biennial	VOCs, U
	Evaluation (9)	GW	33905	North of former 231 Tanks area	Biennial	VOCs
	Evaluation (9)	GW	21505	West of former B776/777 area	Biennial	VOCs
	Sentinel (8)	GW	52505	West of former IHSS 118.1 area	Semiannual	VOCs
	Evaluation (9)	GW	20902	Northwest of former IHSS 118.1	Biennial	VOCs
Former Building 559	AOC (7)	GW	42505	Terminus of FC-2	Semiannual	VOCs
	Evaluation (9)	GW	55905	North part of former B559 area	Biennial	VOCs, U, nitrate
	Evaluation (9)	GW	56305	West part of former B559 area	Biennial	VOCs, U, nitrate
Former IHSS 118.1	Evaluation (9)	GW	18199	North of former IHSS 118.1 area	Biennial	VOCs
	SW Performance [SW018]	SW	SW018	Upstream of FC-2 wetland	Semiannual	VOCs
Former Building 444 Complex	Evaluation (9)	GW	40005	West part of former B444 area	Biennial	VOCs, U
	Evaluation (9)	GW	40205	South part of former B444 end	Biennial	VOCs, U
	Evaluation (9)	GW	P419689	Southeast of former B444 area	Biennial	VOCs, U
	Sentinel (8)	GW	40305	East part of former B444 area	Semiannual	VOCs, U
	Evaluation (9)	GW	P416889	Southeast of former B444 area	Biennial	VOCs, U
	Sentinel (8)	GW	11502	Southeast of former B444 area	Semiannual	VOCs, U
Former Building 881	Evaluation (9)	GW	88205	South part of former B881 area	Biennial	VOCs, U
	Sentinel (8)	GW	88104	South part of former B881 area	Semiannual	VOCs, U
	Sentinel (8)	GW	00797	South of former B881 area	Semiannual	VOCs, U
Former Building 886	Evaluation (9)	GW	22996	East/northeast part of former B886 area	Biennial	VOCs, U
Former Building 991	Sentinel (8)	GW	99305	East part of former B991 area	Semiannual	VOCs, U, nitrate
	Sentinel (8)	GW	99405	Southeast part of former B991 area	Semiannual	VOCs, U, nitrate
	Sentinel (8)	GW	91305	South of confluence of FC-4 and FC-5	Semiannual	VOCs, U, nitrate
Former Oil Burn Pit No. 1	Evaluation (9)	GW	33502	Source area	Biennial	VOCs
	Evaluation (9)	GW	33604	Source area	Biennial	VOCs
Former Oil Burn Pit No. 2	Sentinel (8)	GW	33703	Downgradient of source area	Semiannual	VOCs
	Evaluation (9)	GW	91105	Source area	Biennial	VOCs
	Sentinel (8)	GW	91203	Downgradient of source area	Semiannual	VOCs
Former SW056	Sentinel (8)	GW	45605	Adjacent to French drain remnants and drain interruption	Semiannual	VOCs
OU1 Plume	Evaluation (9)	GW	891WEL	Source area	Biennial	VOCs
	AOC (7)	GW	89104	Downgradient at Woman Creek	Semiannual	VOCs
903 Pad/Ryan's Pit Plume	Evaluation (9)	GW	00191	East of former 903 Pad area	Biennial	VOCs
	Evaluation (9)	GW	50299	East of former 903 Pad area	Biennial	VOCs
	Evaluation (9)	GW	90402	Southeast of former 903 Pad area	Biennial	VOCs
	Evaluation (9)	GW	00491	Southeast of former 903 Pad area	Biennial	VOCs
	Evaluation (9)	GW	07391	Ryan's Pit source area	Biennial	VOCs, U
	Evaluation (9)	GW	90804	Southeast part of 903 Pad/Ryan's Pit Plume	Biennial	VOCs
	Sentinel (8)	GW	90399	Southeast part of 903 Pad/Ryan's Pit Plume at SID	Semiannual	VOCs
	Sentinel (8)	GW	90299	Southeast part of 903 Pad/Ryan's Pit Plume at SID	Semiannual	VOCs
	AOC (7)	GW	10304	Southeast of 903 Pad/Ryan's Pit Plume at Woman Creek	Semiannual	VOCs, U, nitrate
PU&D Yard Plume	Evaluation (9)	GW	30900	Source area	Biennial	VOCs
	Sentinel (8)	GW	30002	Downgradient at N. Walnut Creek	Semiannual	VOCs

Table 2 (continued). Water Monitoring Locations and Sampling Criteria

General Objective	Classification	Media	Location ID (1)	Location Description	Frequency	Analytes (4)
<b>Pre-discharge</b>						
	Pre-discharge (13)	SW	Pond A-4	A-Series terminal pond on N. Walnut Creek	Prior to routine discharge	Pu, Am, isotopic U**, nitrate
	Pre-discharge (13)	SW	Pond B-5	B-Series terminal pond on S. Walnut Creek	Prior to routine discharge	Pu, Am, isotopic U**, nitrate
	Pre-discharge (13)	SW	Pond C-2	C-Series terminal pond in Woman Creek	Prior to routine discharge	Pu, Am, isotopic U**
<b>Notes</b>					<b>Acronyms and Abbreviations</b>	
(1) See Figure 1 for monitoring locations					Ag: silver	
(2) Laboratory analytes are limited to those listed in Appendix C of the Present Landfill Monitoring and Maintenance Plan and Post-Closure Plan					Am: americium-241	
(3) Laboratory analytes are limited to those listed in Appendix C of the Landfill Monitoring and Maintenance Plan, RFETS Original Landfill					AOC: Area of Concern	
(4) Analysis and evaluation for metals and VOCs will be performed for some or all of the analytes listed in Table 1					B (followed by numerals): Building (e.g., B371)	
(5) Results for POCs are evaluated using Figure 5.					Be: beryllium	
(6) Results from POEs are evaluated using Figure 6.					Cd: cadmium	
(7) Results from AOC and Boundary wells and SW018 are evaluated using Figure 7.					Cr: chromium	
(8) Results from Sentinel wells are evaluated using Figure 8.					FC: Functional Channel (e.g., FC-2)	
(9) Results from Evaluation wells are evaluated using Figure 9.					GW: ground water	
(10) Results from RCRA wells are evaluated using Figure 10.					IA: Industrial Area	
(11) Results from Treatment System locations are evaluated using Figure 11.					N/A: not applicable	
(12) Results from OLF SW locations are evaluated using Figure 12.					OLF: Original Landfill	
(13) Results from Predischage locations are evaluated using Figure 13.					OU1: Operable Unit 1	
* Samples of ground water collected for Pu and Am analysis will be filtered in the field using a 0.45 um in-line filter.					PLF: Present Landfill	
** Isotopes U-233,234; U-235; U-238					POC: Point of Compliance	
					POE: Point of Evaluation	
					PU&D: Property Utilization and Disposal	
					Pu: plutonium-239,240	
					RCRA: Resource Conservation and Recovery Act	
					SID: South Interceptor Ditch	
					SPP: Solar Ponds Plume	
					SVOCs: semi-volatile organic compounds	
					SW: surface water	
					U: uranium	
					VOCs: volatile organic compounds	

Table 3. Present and Original Landfill Inspection and Maintenance Requirements

**Present Landfill**

<b>Requirement</b>	<b>Description of activity</b>	<b>Frequency</b>	<b>Documentation/Reporting</b>	<b>Exit strategy</b>
Final cover inspection and monitoring	<ul style="list-style-type: none"> <li>- inspect/monitor slope stability, soil cover</li> <li>- visually inspect surface of landfill cover for cracks, depressions, heaving, and sinkholes</li> <li>- monitor settlement monuments and side slope stability monuments</li> <li>- vegetation monitoring</li> </ul>	<ul style="list-style-type: none"> <li>- monthly for first year (settlement monuments and vegetation quarterly for first year); evaluate frequency during CERCLA periodic review</li> <li>- additional weather-related inspections after storm event of one inch or more of rain in a 24-hour period or significant melt of 10-inch or more snowstorm</li> </ul>	<ul style="list-style-type: none"> <li>- conditions affecting effectiveness of landfill cover to be reported per note 1 below</li> <li>- document on inspection checklist; submit to parties within one month of inspection; include in quarterly and annual reports</li> </ul>	<ul style="list-style-type: none"> <li>- Consultative process or periodic CERCLA review</li> </ul>
Inspection and monitoring of stormwater management system and erosion control features	<ul style="list-style-type: none"> <li>- Visually inspect stormwater management structures (channels/lining, culverts, and outfalls); erosion control features (perimeter channels and natural drainages); and seep treatment system</li> </ul>	<ul style="list-style-type: none"> <li>- monthly for first year; evaluate frequency during CERCLA periodic review</li> <li>- additional weather-related inspections after storm event of one inch or more of rain in a 24-hour period or significant melt of 10-inch or more snowstorm</li> </ul>	<ul style="list-style-type: none"> <li>- conditions affecting effectiveness of landfill cover to be reported per note 1 below</li> <li>- document on inspection checklist; submit to parties within one month of inspection; include in quarterly and annual reports</li> </ul>	<ul style="list-style-type: none"> <li>- Consultative process or periodic CERCLA review</li> </ul>
GW monitoring	Included in Table 2, Figure 1, and Figure 10	Included in Table 2, Figure 1, and Figure 10	Included in Table 2, Figure 1, and Figure 10	Included in Table 2, Figure 1, and Figure 10
Landfill seep and pond monitoring	Included in Table 2, Figure 1, and Figure 11	Included in Table 2, Figure 1, and Figure 11	Included in Table 2, Figure 1, and Figure 11	Included in Table 2, Figure 1, and Figure 11
Maintenance and repairs	Perform minor or major repairs as needed; for major damage or repairs, consult with parties and develop appropriate actions for approval by CDPHE	<ul style="list-style-type: none"> <li>- as needed</li> </ul>	<ul style="list-style-type: none"> <li>- minor/routine repairs and maintenance report on inspection form</li> <li>- conditions affecting effectiveness of landfill cover to be reported per note 1 below</li> </ul>	Consultative process or periodic CERCLA review
Institutional and physical controls	Fence around perimeter of Central OU, signs at entry points to Central OU, warning signs in accordance with 6 CCR 1007-3 Part 265.14		<ul style="list-style-type: none"> <li>- failure of physical controls to be reported per note 1 below</li> <li>- failure of institutional controls to be per note 2 below</li> </ul>	Consultative process or periodic CERCLA review

Table 3 (continued). Present and Original Landfill Inspection and Maintenance Requirements

**Original Landfill**

<b>Requirement</b>	<b>Description of activity</b>	<b>Frequency</b>	<b>Documentation/Reporting</b>	<b>Exit strategy</b>
Final cover inspection and monitoring	<ul style="list-style-type: none"> <li>- inspect/monitor slope stability and soil cover</li> <li>- visually inspect surface of landfill cover for cracks, depressions, heaving, sinkholes; visually inspect diversion berms; measure height and gradient if indicated</li> <li>- monitor settlement monuments</li> </ul>	<ul style="list-style-type: none"> <li>- Quarterly; evaluate frequency during CERCLA periodic review</li> <li>- Additional weather-related monitoring within 2 days after a storm event of one inch or more of rain in a 24-hour period or significant melt of a 10-inch or more snowstorm</li> <li>- quarterly for the first year and annually thereafter</li> </ul>	<ul style="list-style-type: none"> <li>- conditions affecting effectiveness of landfill cover to be reported per note 1 below</li> <li>- document on inspection checklist; submit to parties within one month of inspection; include in quarterly and annual reports</li> </ul>	<ul style="list-style-type: none"> <li>- Consultative process or periodic CERCLA review</li> </ul>
Inspection and monitoring of stormwater management system, seeps, and erosion controls	<ul style="list-style-type: none"> <li>- Visually inspect/monitor stormwater management structures, seeps, and erosion controls</li> </ul>	<ul style="list-style-type: none"> <li>- Quarterly; evaluate frequency during CERCLA periodic review</li> <li>- Additional weather-related monitoring within 2 days after a storm event of one inch or more of rain in a 24-hour period or significant melt of a 10-inch or more snowstorm</li> </ul>	<ul style="list-style-type: none"> <li>- conditions affecting effectiveness of landfill cover to be reported per note 1 below</li> <li>- document on inspection checklist; submit to parties within one month of inspection; include in quarterly and annual reports</li> </ul>	<ul style="list-style-type: none"> <li>- Consultative process or periodic CERCLA review</li> </ul>
Vegetation monitoring	<ul style="list-style-type: none"> <li>- Visually inspect vegetation and perform maintenance as necessary</li> </ul>	<ul style="list-style-type: none"> <li>- monthly from April to September and quarterly the rest of the year for 2006 and 2007; quarterly beginning in 2008</li> </ul>	<ul style="list-style-type: none"> <li>- Document on inspection forms and in annual report</li> </ul>	<ul style="list-style-type: none"> <li>- Consultative process or periodic CERCLA review</li> </ul>
GW monitoring	Included in Table 2, Figure 1, and Figure 10	Included in Table 2, Figure 1, and Figure 10	Included in Table 2, Figure 1, and Figure 10	Included in Table 2, Figure 1, and Figure 10
SW monitoring	Included in Table 2, Figure 1, and Figure 12	Included in Table 2, Figure 1, and Figure 12	Included in Table 2, Figure 1, and Figure 12	Included in Table 2, Figure 1, and Figure 12
Maintenance and repairs	<ul style="list-style-type: none"> <li>- Perform minor or major repairs and maintenance</li> <li>- For major damage or repairs, consult with parties and develop appropriate actions for approval by CDPHE</li> </ul>	<ul style="list-style-type: none"> <li>- as needed</li> </ul>	<ul style="list-style-type: none"> <li>- minor/routine repairs and maintenance, report on inspection form</li> <li>- conditions affecting effectiveness of landfill cover to be reported per note 1 below</li> </ul>	<ul style="list-style-type: none"> <li>- Consultative process or periodic CERCLA review</li> </ul>
Institutional and physical controls	<ul style="list-style-type: none"> <li>- inspection for evidence that institutional controls were violated or physical controls damaged</li> </ul>	<ul style="list-style-type: none"> <li>- document on inspection forms</li> </ul>	<ul style="list-style-type: none"> <li>- failure of physical controls to be reported per note 1 below</li> <li>- failure of institutional controls to be reported per note 2 below</li> </ul>	<ul style="list-style-type: none"> <li>- Consultative process or periodic CERCLA review</li> </ul>



Table 3 (continued). Present and Original Landfill Inspection and Maintenance Requirements

Note 1: For reportable conditions as defined in RFLMA Attachment 2, Section 6.0 (except in the case of failure of institutional controls), DOE will inform CDPHE and EPA within 15 days of receiving the inspection reports or validated data. Evaluation and planning for mitigating actions, if any, will be prepared and submitted as defined in RFLMA, Attachment 2, Section 6.0.

Note 2: In case of failure of institutional controls, DOE will notify EPA and CDPHE within 2 days of discovering evidence and will perform evaluation, consultation, and actions as defined in RFLMA, Attachment 2, Section 6.0.

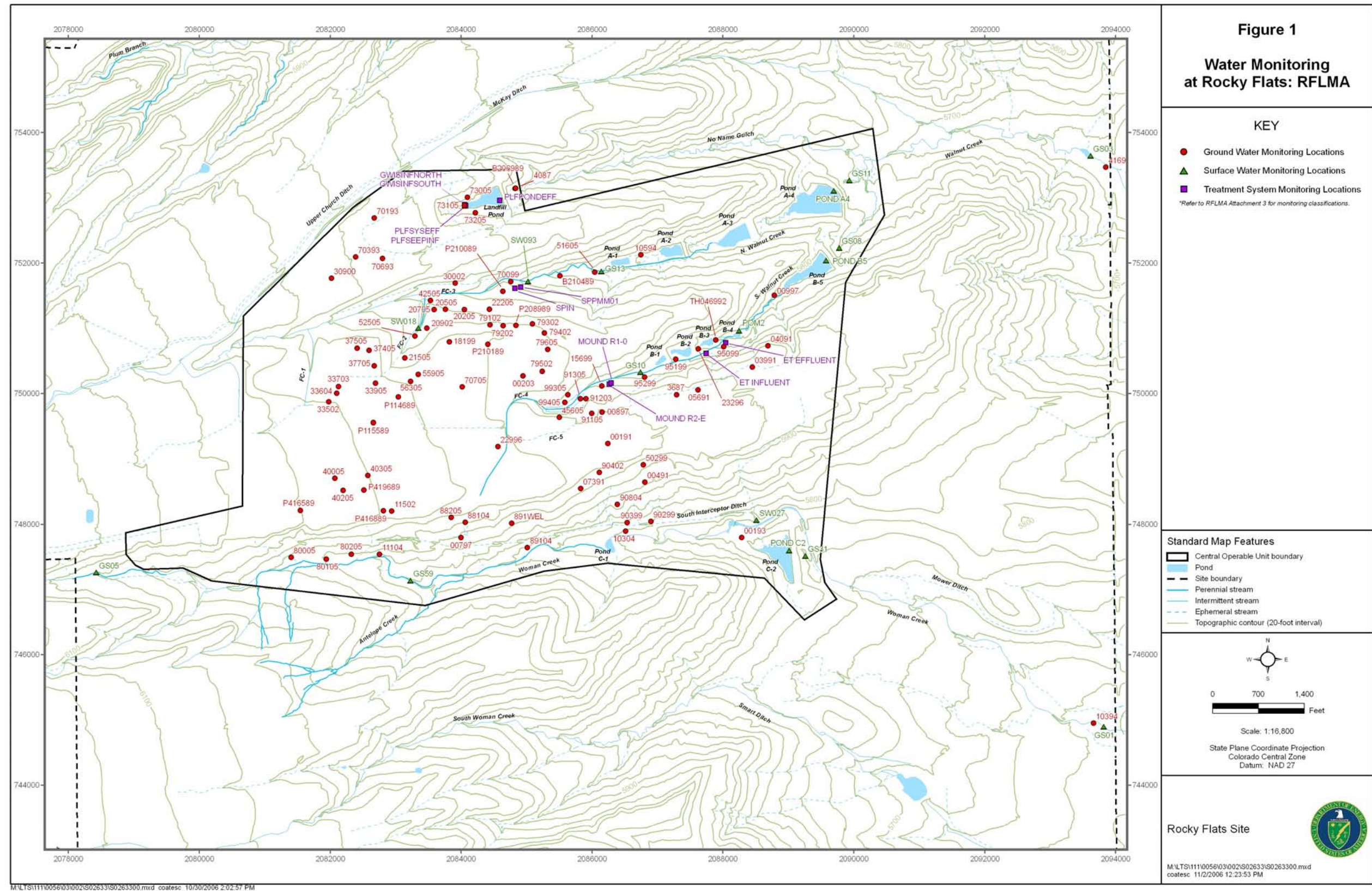
Table 4. Institutional Controls for the Central Operable Unit

Controls	Use Restrictions
1	The construction and use of buildings that will be occupied on a permanent or temporary basis (such as for residences or offices) is prohibited. The construction and use of storage sheds or other, non-occupied structures is permitted, consistent with the restrictions contained in controls 2 and 3 below, and provided such use does not impair any aspect of the response action at Rocky Flats.
2	Excavation, drilling, and other intrusive activities below a depth of three feet are prohibited, except for remedy-related purposes and routine or emergency maintenance of existing utility easements, in accordance with pre-approved procedures.
3	No grading, excavation, digging, tilling, or other disturbance of any kind of surface soils is permitted, except in accordance with an erosion control plan (including Surface Water Protection Plans submitted to EPA under the Clean Water Act) approved by CDPHE or EPA. Any such soil disturbance will restore the soil surface to preexisting grade.
4	Surface water may not be used for drinking water or agricultural purposes.
5	The construction or operation of groundwater wells is prohibited, except for remedy-related purposes.
6	Digging, drilling, tilling, grading, excavation, construction of any sort (including construction of any structures, paths, trails or roads), and vehicular traffic are prohibited on the covers of the Present Landfill and the Original Landfill, except for authorized response actions.
7	Activities that may damage or impair the proper functioning of any engineered component of the response action, including but not limited to any treatment system, monitoring well, landfill cap, or surveyed benchmark, are prohibited.

Table 5. Ecological Sampling

Requirement	Description of Activity	Frequency	Documentation/Reporting	Exit Strategy
Sample surface water and sediment for: Ammonia Cyanide Radium-228	Collect surface water and sediment samples from Ponds A4, B5, and C2	<u>Surface water:</u> Quarterly (minimum of 3)  <u>Sediment:</u> Once	Report data in quarterly and annual reports; evaluate in CERCLA Periodic Review for relevance of the data to the ecological risks and uncertainty identified in the CAD/ROD	Consultative process or periodic CERCLA review

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*Figure 1. Water Monitoring Locations*



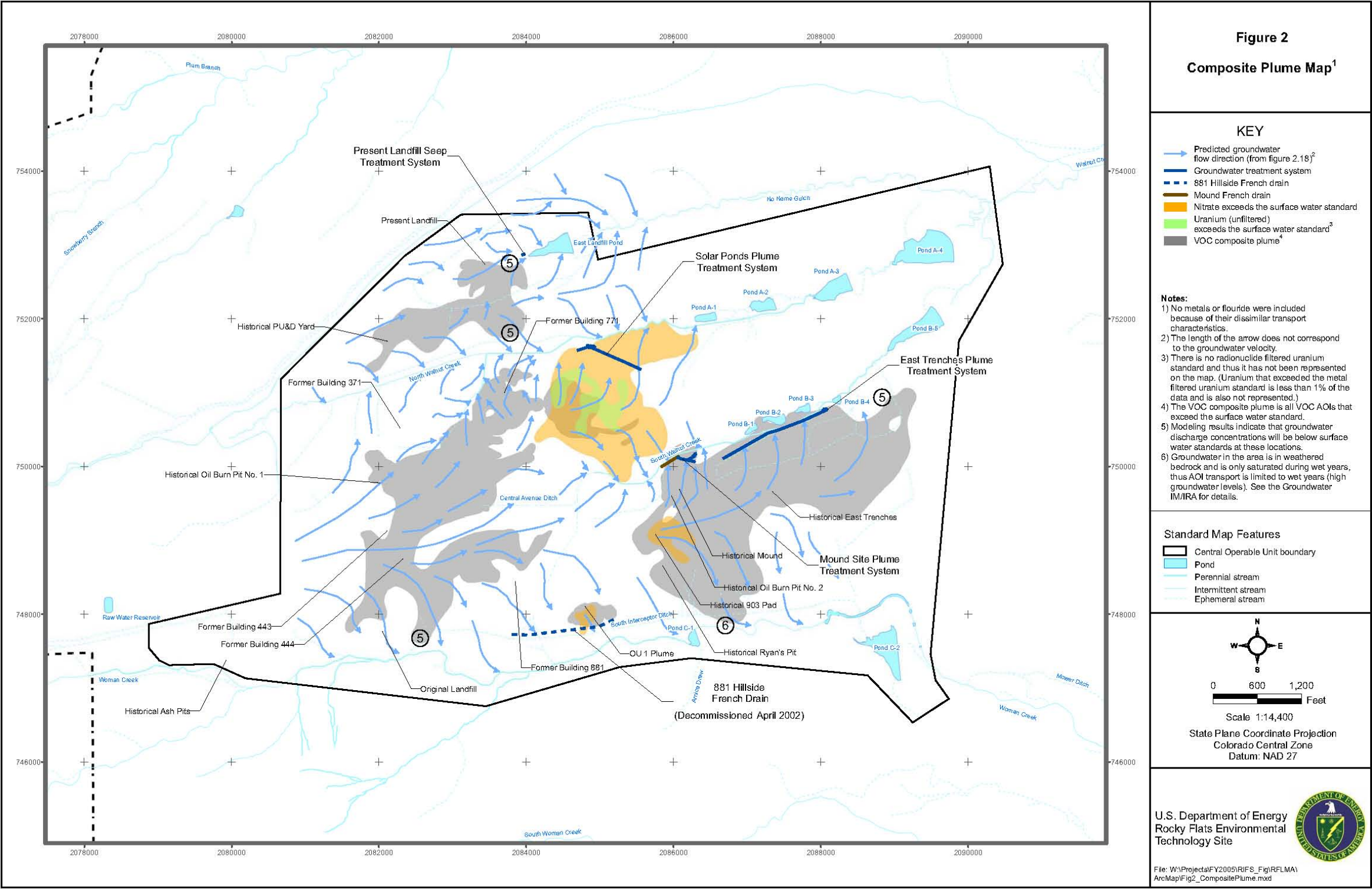
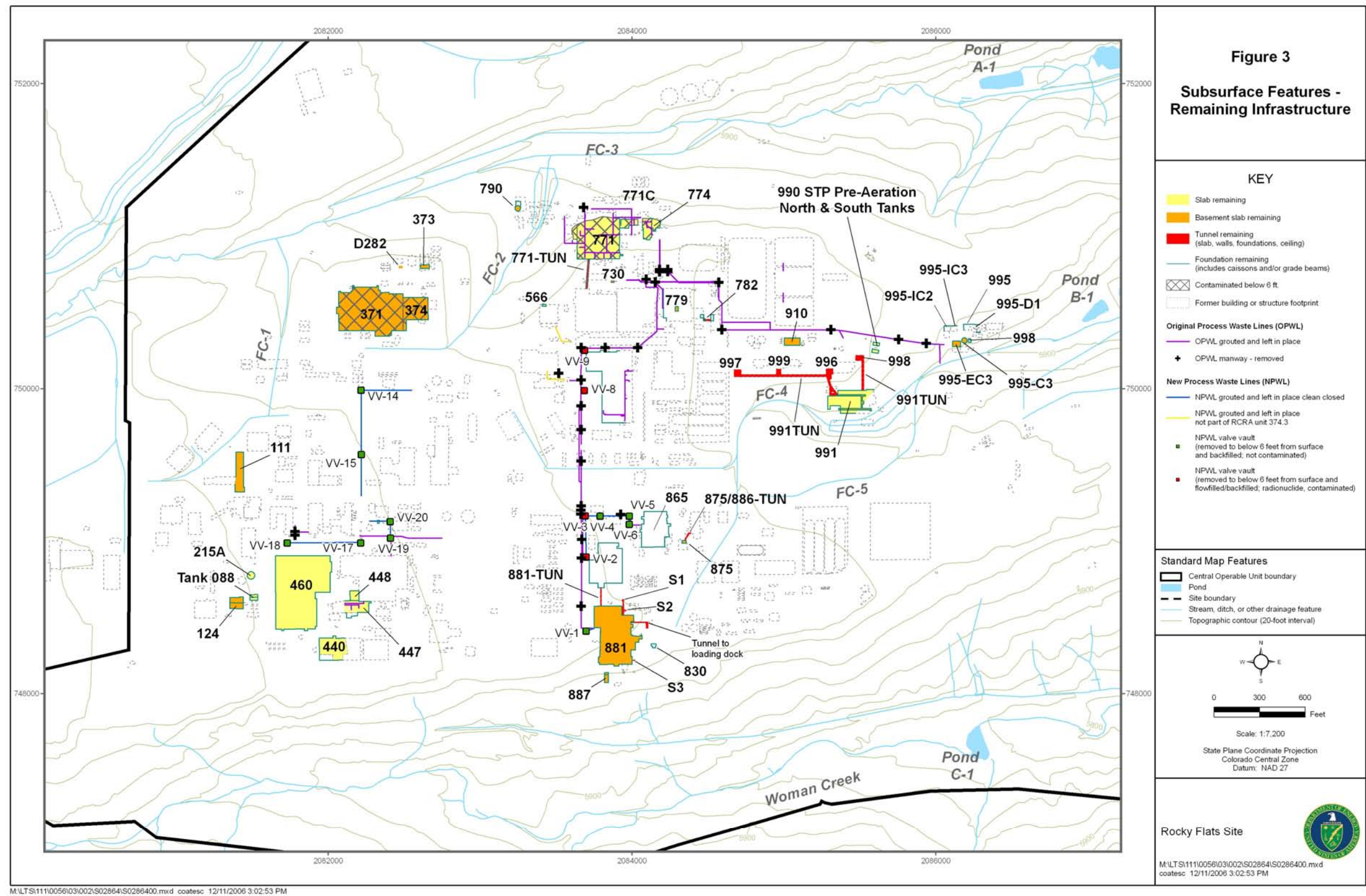


Figure 2. Composite Plume Map



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*Figure 3. Subsurface Features – Remaining Infrastructure*



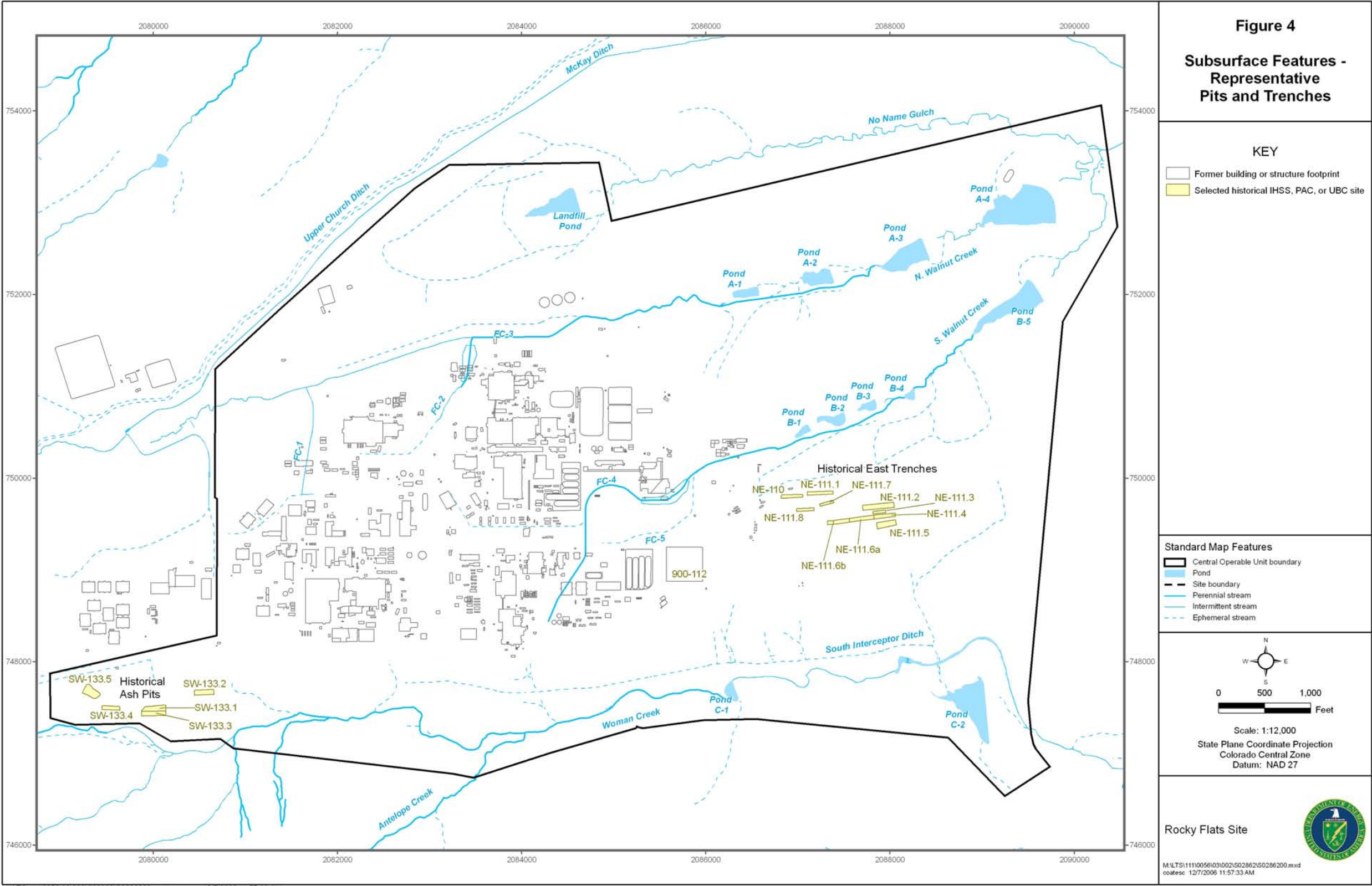
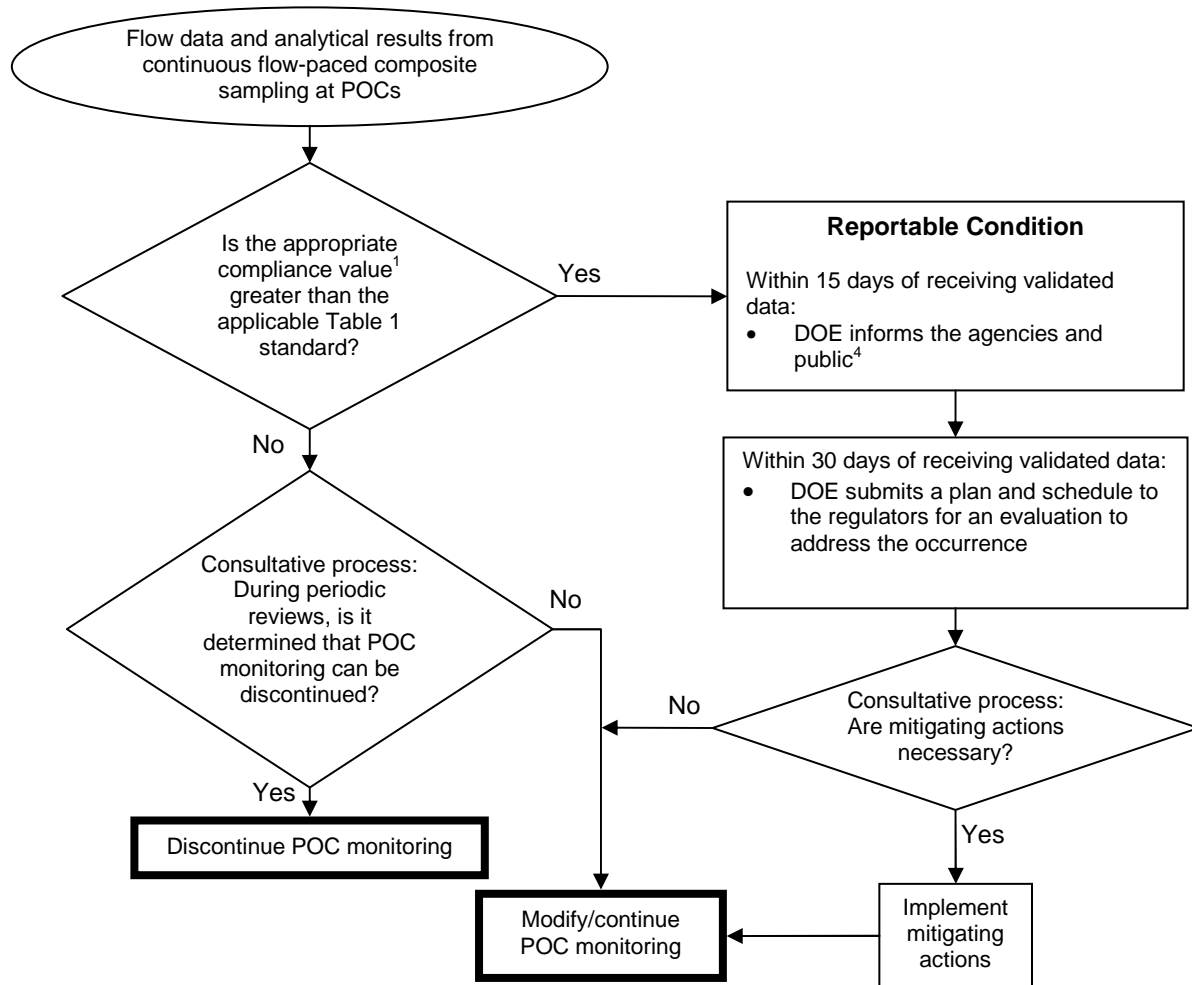


Figure 4. Subsurface Features – Representative Pits and Trenches

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Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria.

<sup>1</sup> Appropriate Compliance Values by locations and analytes (see Table 2 for reference)

- All Indiana Street POCs:
  - plutonium, americium, uranium → 30-day average<sup>2</sup>
- All Terminal Pond POCs:
  - plutonium, americium, uranium → 12-month rolling average<sup>3</sup>
- Walnut Creek at Indiana Street POCs:
  - nitrate → 85<sup>th</sup> percentile of 30-day averages<sup>3</sup> for previous calendar year
- Walnut Creek Terminal Pond POCs:
  - nitrate → 12-month rolling average<sup>2</sup>

<sup>2</sup> The 30-day average for a particular day is calculated as a volume-weighted average of a “window” of time containing the previous 30 days with measurable flow. Each day has its own discharge volume (measured with a flow meter) and activity/concentration (from the sample carboy in place at the end of that day). Therefore, there are 365 30-day moving averages for a location that flows all year. At locations that have intermittent flows, 30-day averages are reported as averages of the previous 30 days of greater than zero flow. For days where no analytical result is available, either due to failed laboratory analysis or non-sufficient quantity (NSQ) for analysis, no 30-day average is reported.

<sup>3</sup> The 12-month rolling average for the last day of a particular month is calculated as a volume-weighted average of a “window” of time containing the previous 12 months. Each 12-month “window” includes daily discharge volumes (measured with a flow meter) and daily activities/concentrations (from the sample carboy in place at the end of that day). Therefore, there are twelve 12-month rolling averages for a given calendar year. Days with no flow or no analytical result, either due to failed laboratory analysis or NSQ for analysis, are not included in the average. When no flow has occurred in the previous 12 months, no 12-month rolling average is reported.

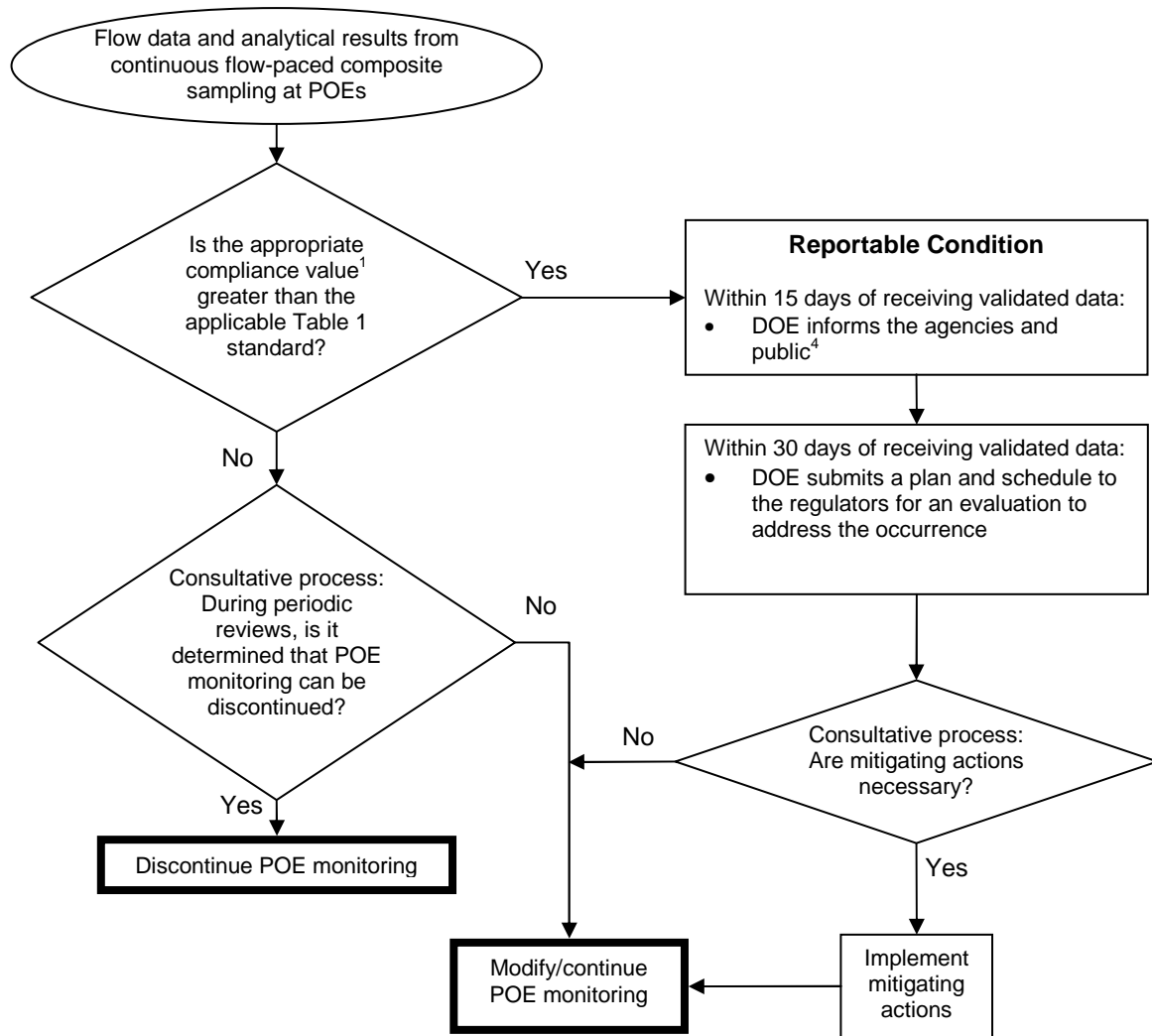
<sup>4</sup> Agencies: EPA, CDPHE, and USFWS

Public: Cities of Broomfield, Northglenn, Thornton, and Westminster; Rocky Flats Stewardship Council (RFSC)

Figure 5. Points of Compliance



# DRAFT ROCKY FLATS LEGACY MANAGEMENT AGREEMENT



Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria.

<sup>1</sup> Appropriate Compliance Values by analytes (see Table 2 for reference)

- plutonium, americium, uranium → 12-month rolling average<sup>2</sup>
- dissolved Cd and Ag, total Be and Cr → 85<sup>th</sup> percentile of 30-day averages<sup>3</sup> for previous calendar year

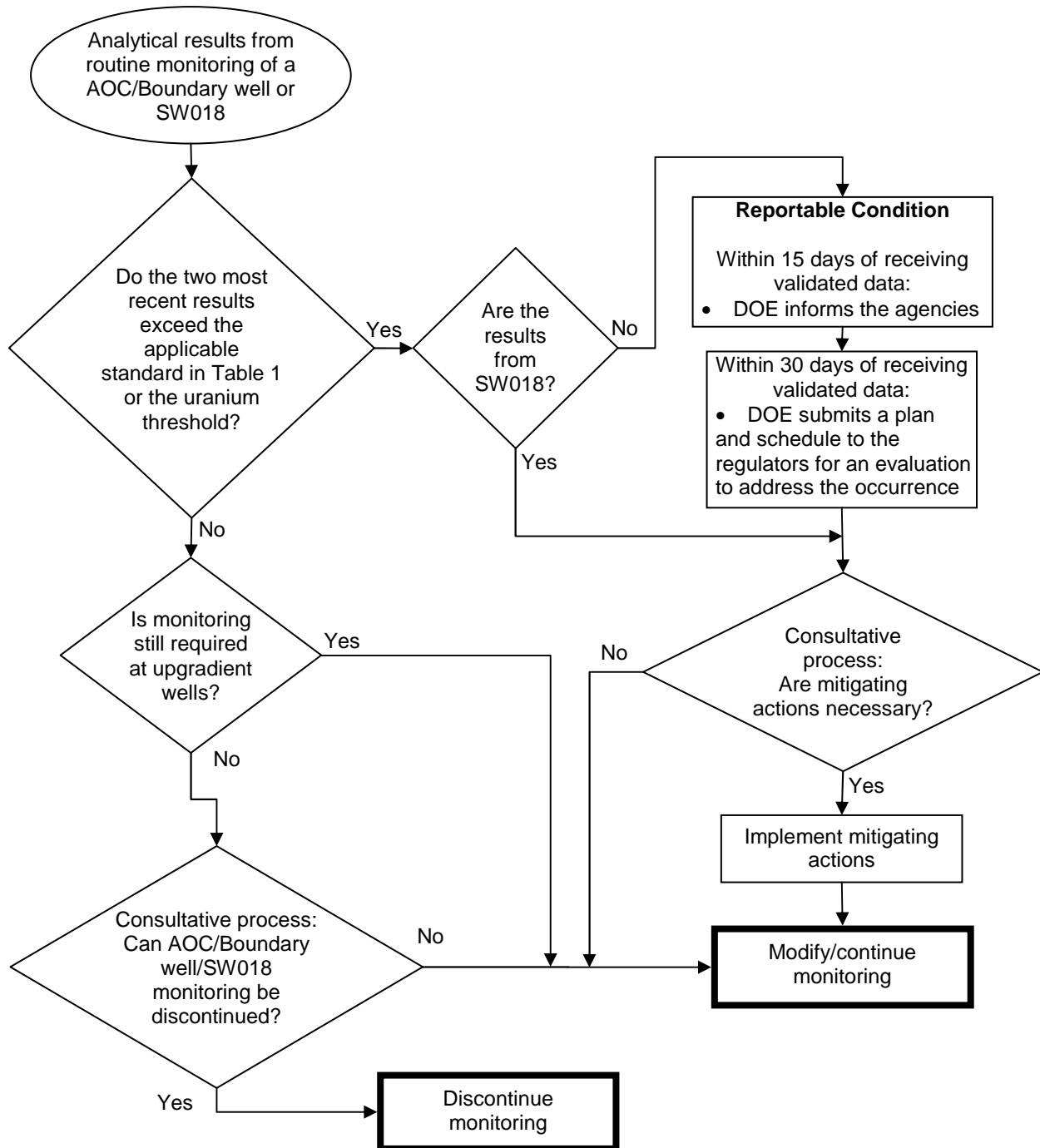
<sup>2</sup> The 30-day average for a particular day is calculated as a volume-weighted average of a “window” of time containing the previous 30-days with measurable flow. Each day has its own discharge volume (measured with a flow meter) and activity/concentration (from the sample carboy in place at the end of that day). Therefore, there are 365 30 day moving averages for a location that flows all year. At locations that have intermittent flows, 30-day averages are reported as averages of the previous 30 days of greater than zero flow. For days where no analytical result is available, either due to failed laboratory analysis or NSQ for analysis, no 30-day average is reported.

<sup>3</sup> The 12-month rolling average for the last day of a particular month is calculated as a volume-weighted average of a “window” of time containing the previous 12 months. Each 12-month “window” includes daily discharge volumes (measured with a flow meter) and daily activities/concentrations (from the sample carboy in place at the end of that day). Therefore, there are twelve 12-month rolling averages for a given calendar year. Days with no flow or no analytical result, either due to failed laboratory analysis or NSQ for analysis, are not included in the average. When no flow has occurred in the previous 12 months, no 12-month rolling average is reported.

<sup>4</sup> Agencies: EPA, CDPHE, and USFWS

Public: Cities of Broomfield, Northglenn, Thornton, and Westminster; Rocky Flats Stewardship Council (RFSC)

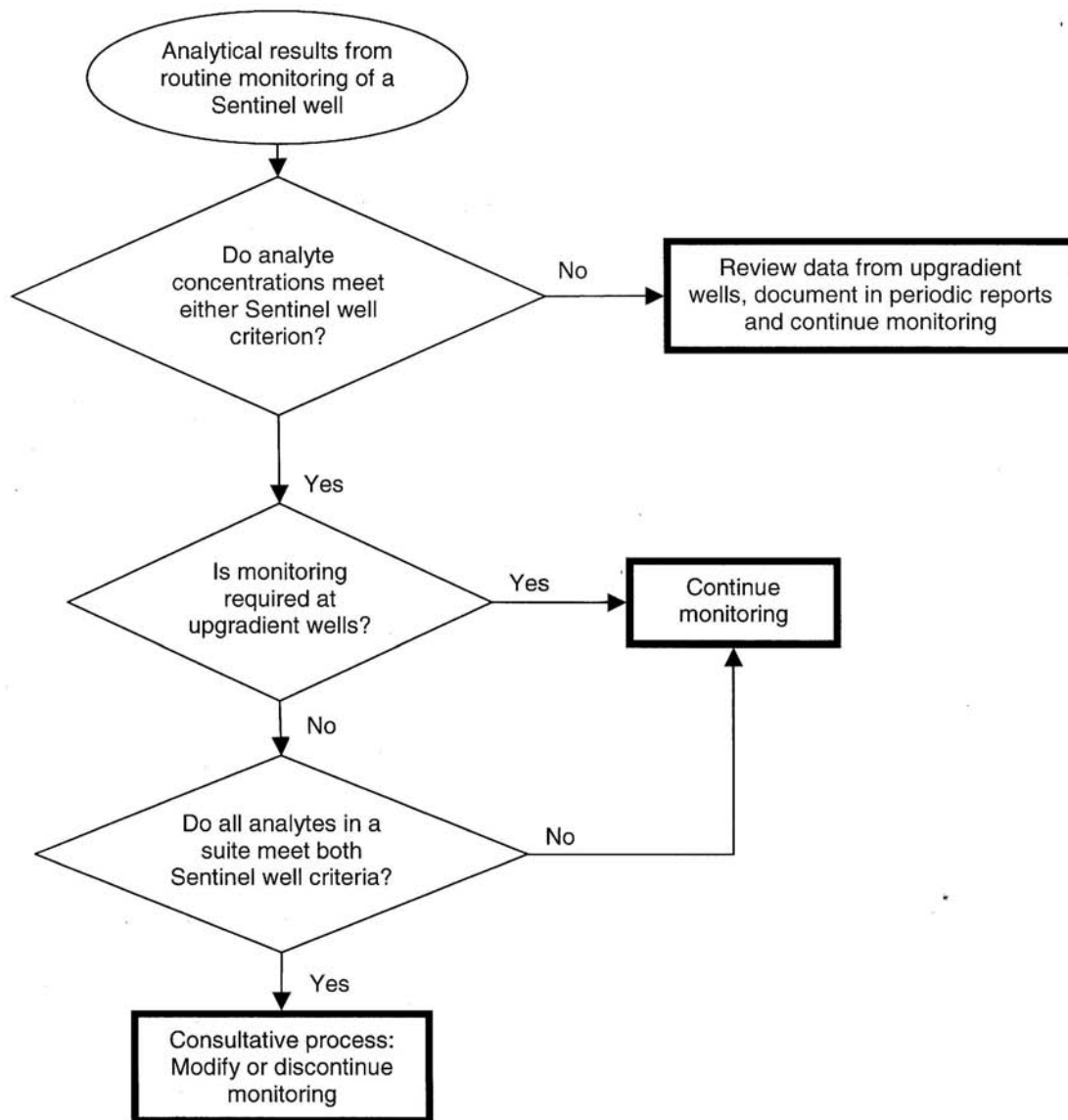
Figure 6. Points of Evaluation



Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria.

- AOC wells and location SW018 are sampled twice each year; see Table 2.
- Boundary wells are sampled once each year; see Table 2. These wells are not part of the remedy, but are a component of operational monitoring.
- Decisions related to uranium in ground water are based upon a 16 ug/L threshold for Boundary wells (basis: the 11 pCi/L standard) and a 120 ug/L threshold for AOC wells (basis: a grand mean of results from Site-wide high-resolution uranium analyses performed in the late 1990s through mid-2000s), rather than the standard in Table 1.

Figure 7. Area of Concern Wells, Boundary Wells, and SW018



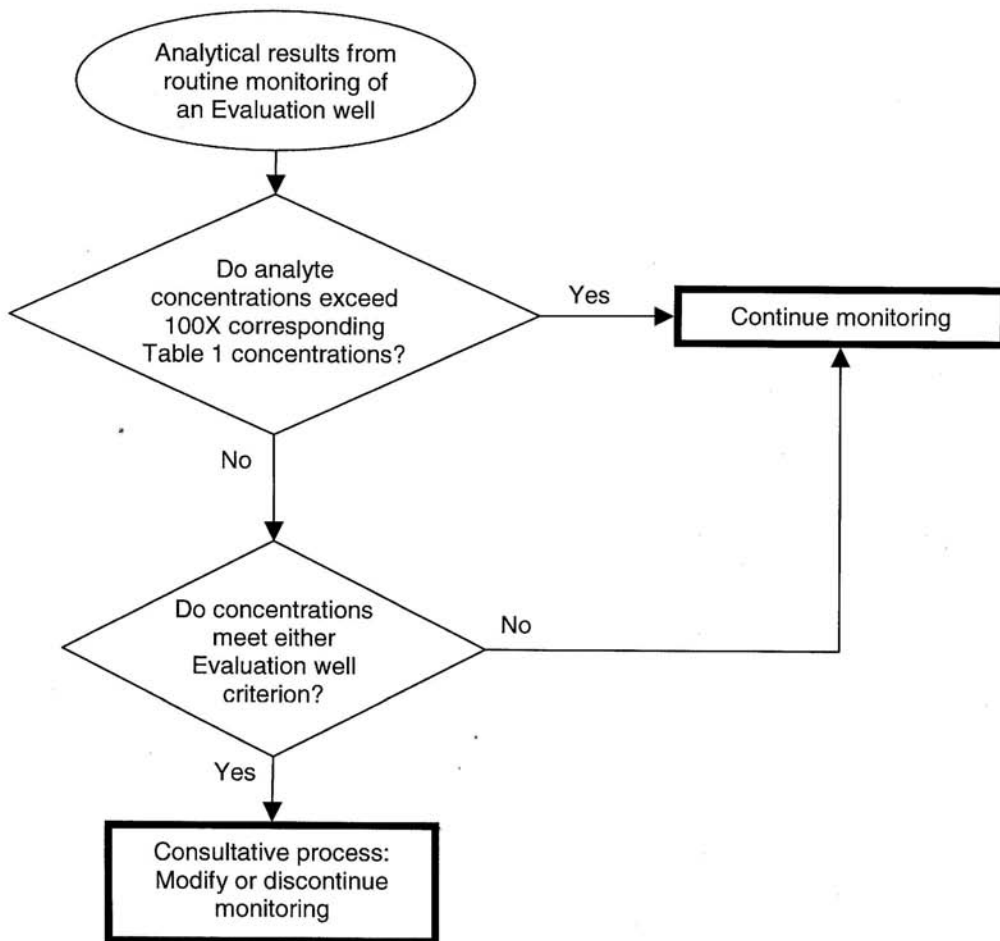
Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria.

- Sentinel wells are sampled twice each year; see Table 2.
- Decisions related to uranium are based upon a 120 ug/L threshold for AOC wells (basis: a grand mean of results from Site-wide high-resolution uranium analyses performed in the late 1990s through mid-2000s), rather than the standard in Table 1.

**Sentinel Well Criteria**

1. The 85<sup>th</sup> percentile concentration of an analyte *is less than or equal to* the corresponding concentration in Table 1 or, for uranium, the 85<sup>th</sup> percentile concentration does not exceed 2x120 ug/L or the highest calendar year 2005 concentration, whichever is higher.
2. Analyte concentrations exhibit an indeterminate or statistically-significant *decreasing* trend at the 95% confidence level.

*Figure 8. Sentinel Wells*



Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria.

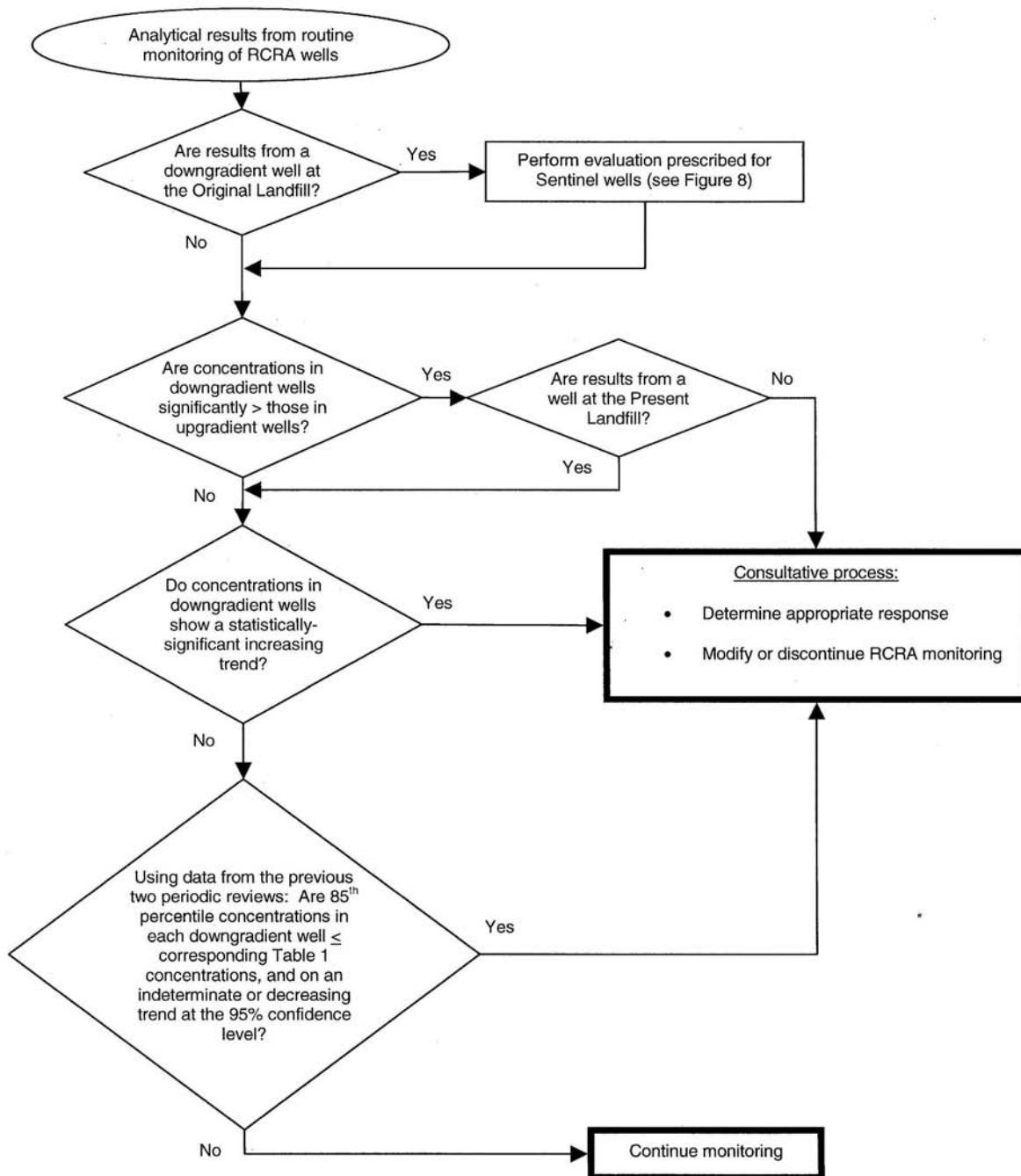
- Evaluation wells are listed in Table 2.

Evaluation Well Criteria:

1. The 85<sup>th</sup> percentile concentration of an analyte *is less than or equal to* the corresponding concentration in Table 1, or, for uranium, 240 ug/L or highest pre-CY05 concentration, whichever is higher.
2. Analyte concentrations exhibit an indeterminate or statistically-significant *decreasing* trend at the 95% confidence level.

*Figure 9. Evaluation Wells*

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Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria. RCRA wells are sampled quarterly; see Table 2.

Figure 10. RCRA Wells

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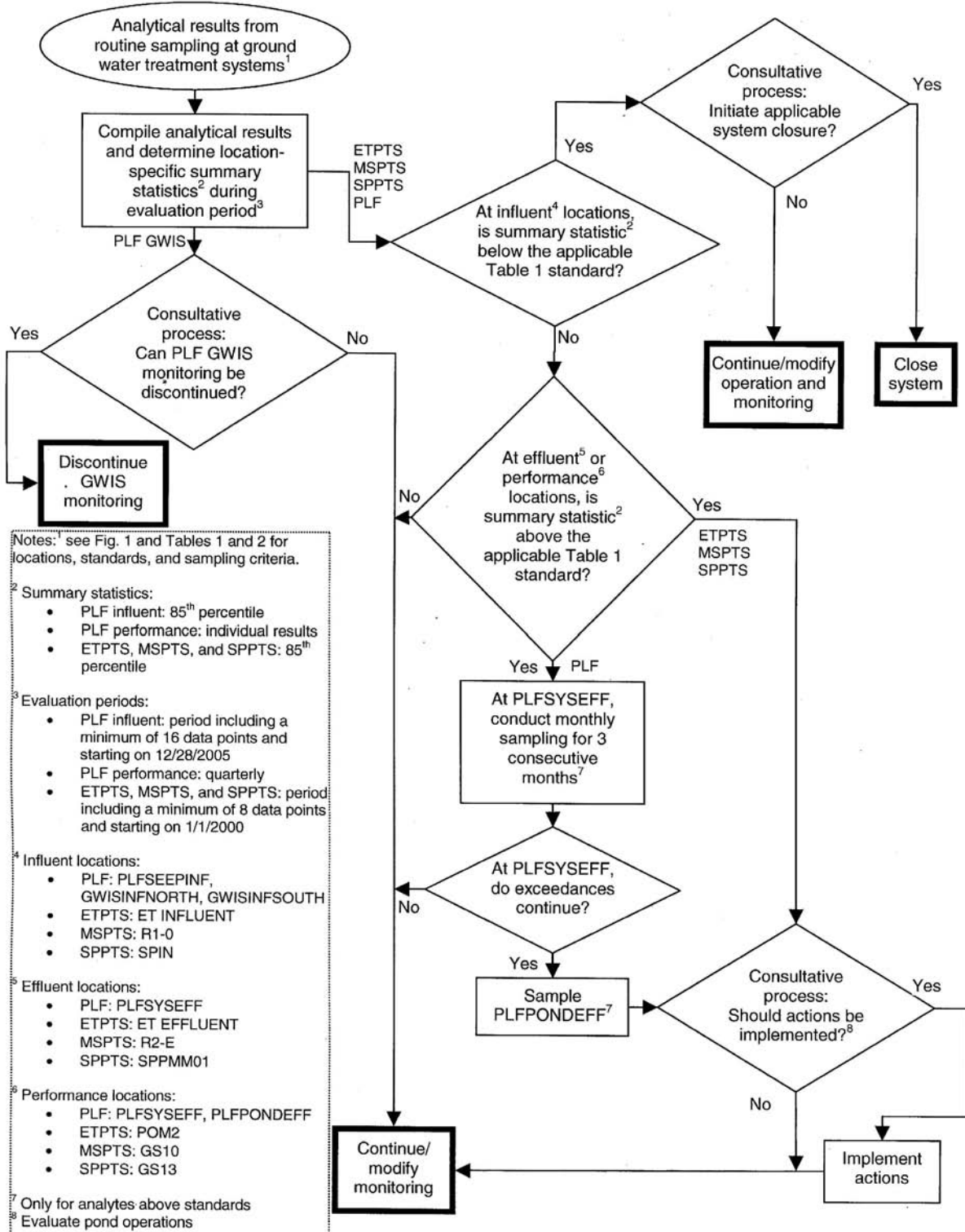


Figure 11. Groundwater Treatment Systems

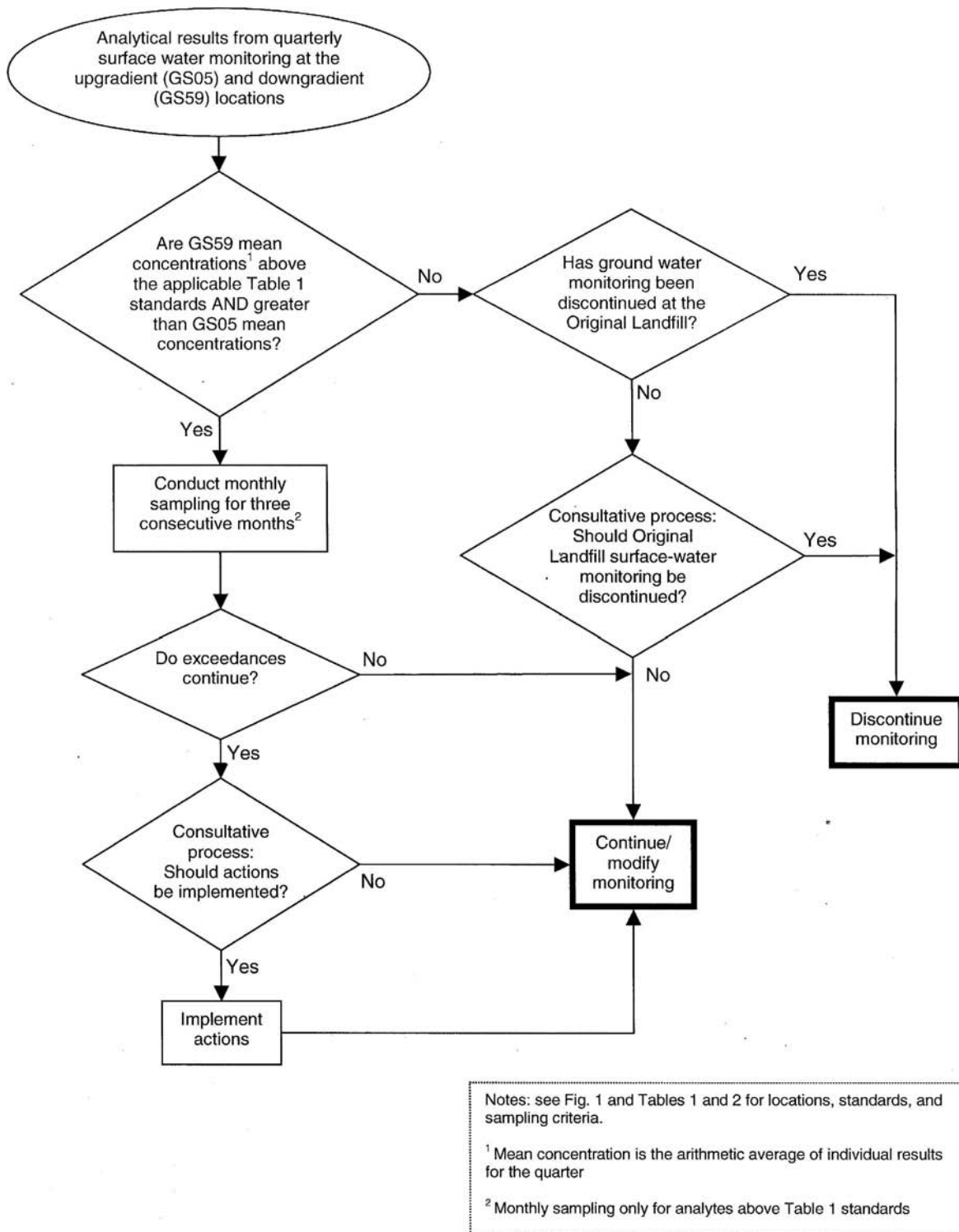


Figure 12. Original Landfill Surface Water

# DRAFT ROCKY FLATS LEGACY MANAGEMENT AGREEMENT

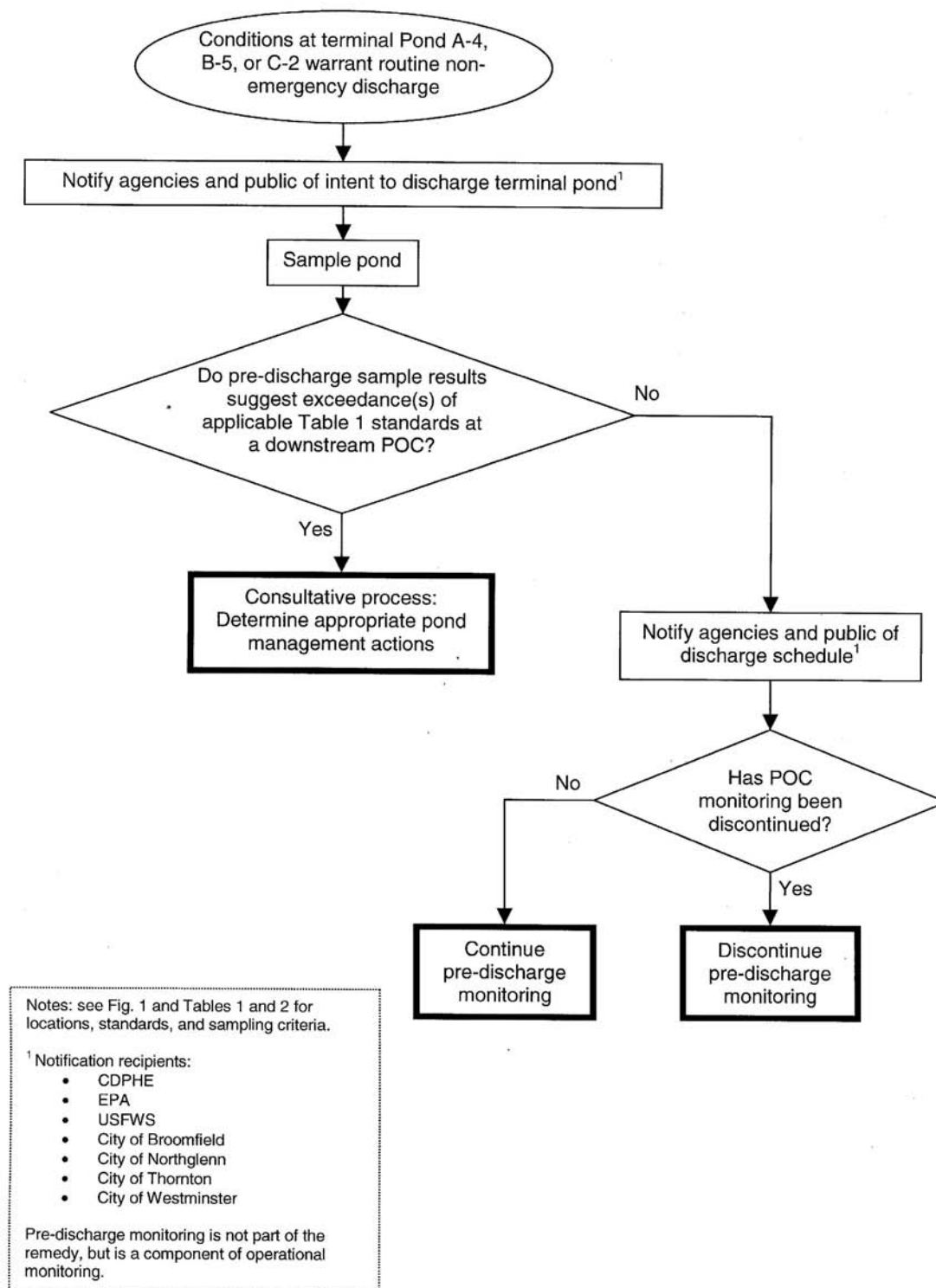


Figure 13. Pre-discharge Pond Sampling



## **Appendix 1**

### **State/EPA Memorandum of Understanding**

ROCKY FLATS LEGACY MANAGEMENT AGREEMENT  
APPENDIX 1:

MEMORANDUM OF UNDERSTANDING BETWEEN  
THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT  
AND  
THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY - REGION 8  
FOR  
ROCKY FLATS

## 1 INTRODUCTION

### 1.1 Parties to the Agreement

This Memorandum of Understanding (MOU) is entered into by the United States Environmental Protection Agency, Region 8 (EPA), and the Colorado Department of Public Health and Environment (CDPHE). EPA and CDPHE are referred to jointly as the Parties.

- 1.2 The purpose of this MOU is to define the roles of the Parties with respect to oversight of post-cleanup activities at Rocky Flats pursuant to the Rocky Flats Legacy Management Agreement (RFLMA). The RFLMA is a joint Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) § 120 Interagency Agreement and Colorado Hazardous Waste Act ("CHWA")/ Resource Conservation and Recovery Act ("RCRA") corrective action order. The RFLMA establishes the regulatory framework for implementing the final response action at Rocky Flats and ensuring that the final response action remains protective of human health and the environment.

## 2 DUTIES AND RESPONSIBILITIES

- 2.1 CDPHE has the overall lead regulatory responsibility at Rocky Flats in accordance with the RFLMA among CDPHE, EPA and the Department of Energy (DOE). EPA will operate in a support role to CDPHE throughout the implementation of the RFLMA, except for five-year reviews and delisting decisions (see Section 2.6 below). It is the intent of the Parties to foster, to the maximum extent practicable, an EPA/CDPHE partnership.
- 2.2 The Parties agree to follow a consultative process in implementing this Agreement. "Consultation" and "the consultative process" mean the responsibility of one Party to meet and confer with another Party and any appropriate contractors in order to reach agreement, to the extent possible, regarding a proposed course of action. Consultation involves a cooperative approach to problem solving at the staff level. Consultation includes the responsibility to raise any concerns or suggestions regarding the implementation of this Agreement as soon as the concern or suggestion is identified, to maximize the chances of reaching agreement before a document must be submitted or a regulatory determination rendered.
- 2.3 EPA and CDPHE agree that the assigned project managers will consult and coordinate regarding oversight of the implementation of the RFLMA. The project managers shall maintain frequent contact through verbal and/or written communication. A Party which changes its project manager shall notify the other Party in writing in a timely manner of the change.

- 2.4 EPA will forward comments on work plans, reports, or documents within two weeks of their receipt from the facility. CDPHE will compile a consistent set of comments and attempt to resolve any of EPA's comments that are inconsistent with CDPHE's comments within two weeks of receiving them.
- 2.5 CDPHE will inform EPA of upcoming site visits, inspections, meetings, or other events and of notifications and documents CDPHE receives as lead regulatory authority.
- 2.6 EPA shall consult with CDPHE regarding five-year reviews and delisting determinations. CDPHE may prepare recommendations for EPA's consideration. CDPHE and EPA shall consult regarding the recommended decision prior to issuance of a final decision.
- 2.7 The Parties shall consult regarding any matter subject to dispute resolution under the RFLMA.
- 2.8 This MOU only addresses the relationship of the Parties with regard to Rocky Flats. This MOU creates no rights or causes of action for anyone not a party to it.

### 3 COMMUNITY RELATIONS

- 3.1 The Parties will coordinate community relations activities, including the issuance of fact sheets, press releases, community interviews, and the conduct of press conferences. The Parties will:
  - 3.1.1 Notify the other party in advance that a press conference is being conducted, or a major fact sheet or press release is being drafted for any Rocky Flats activity. Notification will include proposed conference date or press release date, content, and key points of contact.
  - 3.1.2 Transmit draft press releases to the other party. Except in the case of an emergency, a 24-hour comment period will be provided.
  - 3.1.3 Notify the other party of final press release issuance and, whenever practicable, transmit a copy of the final press release prior to release to the media.

### 4 ENFORCEMENT

The Parties agree that enforcement action for violations of the RFLMA that are CHWA violations will be the responsibility of CDPHE under state authorities. CDPHE shall advise EPA of any matter that it believes may constitute a violation of CERCLA, and shall consult with EPA regarding a course of action. This MOU does not limit the enforcement authority of EPA or CDPHE. By entering into this MOU, neither EPA nor

CDPHE waive any right, authority, or claim it may have under Federal or State law, but expressly reserve all of the rights, authorities, and claims it may have thereunder, except that EPA agrees to exhaust any applicable remedies pursuant to the Dispute Resolution process, prior to exercising any reserved rights for disputes.

5 DISPUTE RESOLUTION

The parties will resolve any disputes through the dispute resolution provisions in Part 7 of the RFLMA.

6 MODIFICATION/TERMINATION

This MOU may be modified in writing, with mutual consent of the Parties. This MOU can be terminated by mutual consent of the Parties.

7 SIGNATURES

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Gary W. Baughman, Division Director  
Hazardous Materials and Waste Management Division  
Colorado Department of Public Health and Environment

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Date

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Max H. Dodson  
Assistant Regional Administrator  
Ecosystem Protection and Remediation  
U.S. Environmental Protection Agency, Region 8

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Date

## **Appendix 2**

### **Public Involvement Plan**

# **Rocky Flats Site Legacy Management Public Involvement Plan**

*DRAFT*  
December 2006

Prepared for  
U.S. Department of Energy

Work Performed Under DOE  
Contract Number DE-AC01-02GJ79491

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## Appendix A

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## Acronyms

CAD	Corrective Action Decision
CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DOE	U.S. Department of Energy
EM	Office of Environmental Management
EPA	U.S. Environmental Protection Agency
GEMS	Geospatial Environmental Mapping System
ISM	Interim Surveillance and Maintenance
LM	Office of Legacy Management
LSO	Local Stakeholder Organization
NPL	National Priorities List
RFCA	Rocky Flats Cleanup Agreement
RFLMA	Rocky Flats Legacy Management Agreement
RFSC	Rocky Flats Stewardship Council (LSO)
RFSOG	Rocky Flats Site Operations Guide
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act of 1986
USFWS	U.S. Fish and Wildlife Service

## **Introduction**

The Rocky Flats Site (Rocky Flats) is managed by the U.S. Department of Energy (DOE) Office of Legacy Management (LM), which was established in December 2003. The mission of LM is to effectively and efficiently manage the environmental and human legacy issues related to the U.S. Government's Cold War nuclear weapons program for current and future generations.

Throughout the course of cleanup of Rocky Flats, DOE has made it a priority to gather community opinion as part of its decision-making process. DOE continues its public involvement efforts as the focus of the Rocky Flats mission now turns to long-term operation, monitoring and maintenance of the site. The cleanup at Rocky Flats and the plans for long-term management of the site have benefited and are expected to continue to benefit from public involvement dialogue among state and federal regulators, stakeholder organizations, elected officials, and members of the general public.

This Legacy Management Public Involvement Plan complies with the public involvement requirement under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, and as implemented by the Rocky Flats Legacy Management Agreement (RFLMA). All community relations activities, including this Legacy Management Public Involvement Plan, continue to follow U.S. Environmental Protection Agency (EPA) and DOE guidance on public participation. This plan outlines the methods of public involvement and communication used to inform the public of site conditions and activities. LM is taking an active role in ongoing community involvement and will have a proactive role in all areas of interest to the public. Additional communications or notifications to stakeholders not specified in this plan may be addressed in other documents, such as the RFLMA and the Emergency Response Plan for Rocky Flats Site Dams. This plan will be updated as appropriate to address public involvement activities.

## **Site Description and Background**

The Rocky Flats Plant was established in 1951 to perform a crucial role in the nation's defense effort: to produce plutonium and uranium components used in nuclear weapons. From 1953 until 1992, the mission of the Rocky Flats Plant was the production of nuclear weapons components. The majority of the triggers in the nuclear weapons stockpile were manufactured at Rocky Flats. Information on specific weapons containing Rocky Flats-built nuclear triggers remains classified. However, it is known that triggers built at Rocky Flats were used in multiple weapon types, including individual bombs, warheads, artillery shells, and atomic demolition munitions. The trigger contains the majority of the fissile material in a nuclear weapon. Parts were formed from plutonium, uranium, beryllium, stainless steel, and other materials. The Rocky Flats Plant also disassembled retired weapons to recover plutonium for reuse in weapons production.

Nuclear weapons production continued at Rocky Flats through the 1980s. In 1989, a series of events occurred that would interrupt and ultimately end production at the plant. Rocky Flats officially became a closure site in 1992 following the collapse of the former Soviet Union. The final mission of the Rocky Flats Closure Project was the safe cleanup and closure of the entire

former nuclear weapons production site in compliance with the Rocky Flats Cleanup Agreement (RFCA).

The site consisted of approximately 6,200 acres in northern Jefferson County, Colorado, approximately 16 miles northwest of Denver and seven to 12 miles from the communities of Boulder, Broomfield, Westminster, Arvada, Superior, and Golden. It is situated on a plateau at the eastern edge of the Front Range of the Rocky Mountains, at an elevation of about 6,000 feet. The site was divided into three geographic areas, each fenced and protected by security forces. The industrial area, consisting of 384 acres, was located in the center of the site. There were more than 800 structures in the industrial area that included approximately 150 permanent buildings and 90 trailers, plus temporary structures, sheds, tanks, and annexes to larger buildings. The protected area was located within the northern portion of the industrial area and contained a complex of plutonium production facilities. This area was heavily fenced and guarded. The Buffer Zone, the remaining 5,800 acres, surrounded the industrial area and protected the site from potential encroachment.

Site cleanup and closure was completed in October 2005, at a total cost of approximately \$7 billion. DOE will retain the approximately 1,300 acres of the Central Operable Unit that includes the former industrial area for long-term legacy management. The bulk of the former Buffer Zone, approximately 4,900 acres, will be transitioned to a National Wildlife Refuge under the auspices of US Fish and Wildlife Service (USFWS).

## **Regulatory Framework**

In response to growing concern about health and environmental risks posed by hazardous waste sites, Congress established the Superfund Program in 1980 and SARA in 1986. EPA administers the Superfund Program in cooperation with individual states and tribal governments. The National Priorities List (NPL) is a list of top-priority hazardous waste sites that are eligible for extensive, long-term cleanup under the Federal Superfund Program. EPA placed the Rocky Flats Plant on the NPL in October 1989. All sites under the Superfund Program are regulated by CERCLA, as amended by SARA, and Subpart E of the National Oil and Hazardous Substances Pollution Contingency Plan, found in 40 *U.S. Code of Federal Regulations* Part 300.400. Rocky Flats was cleaned up under the requirements of CERCLA and the Colorado Hazardous Waste Act.

RFCA, signed in 1996, was the environmental regulatory framework for the cleanup and closure of Rocky Flats. RFCA was negotiated among DOE, EPA, and the state of Colorado. Additionally, the Rocky Flats National Wildlife Refuge Act (2001) prescribes an additional step to ensure that the lands transferred to USFWS are suitable for use as a refuge.

RFCA initiated the Remedial Investigation/Feasibility Study, a comprehensive environmental investigation conducted at Rocky Flats to identify the nature and extent of contamination and to determine the best cleanup solutions. A regulatory agreement for Rocky Flats, the RFLMA, implements the terms of the Corrective Action Decision/Record of Decision (CAD/ROD) and

supports legacy management activities after site closure. The CAD/ROD determines the final action or remedy for the site.

Before DOE can transfer any land to USFWS, EPA, under the terms of the Refuge Act, must certify that the cleanup is complete and the remedy is operating successfully. After EPA certification, DOE will transfer most of Rocky Flats property to USFWS. A periodic review of the remedy is required by CERCLA. This review will take place at least every five years and will determine whether the remedy at Rocky Flats remains protective of human health and the environment, or if additional actions need to be taken by DOE.

## **Community Profile**

Rocky Flats is located in northern Jefferson County, Colorado, approximately 16 miles northwest of downtown Denver, a highly populated metropolitan area. The 2003 census figures indicate an estimated population of 3 million residents within a 50-mile radius of the site. Figure 1 shows a location map of the site and vicinity.

The site was a self-contained concentration of industrial buildings surrounded by ranch land, preserved open space, mining areas, and a low-density residential area. However, numerous developments are planned in close proximity to the site. The closest community is Rock Creek Ranch, originally developed in 1988 as part of the town of Superior. Plans are underway to develop Cimarron Park—426 acres off the southeast corner of Indiana and 96<sup>th</sup> Avenues—for industrial, office, and warehouse use. The Vauxmont Intermountain Community Project will include 500 homes and 8.8 million square feet of office and retail space and is just south of the Rocky Flats fence to Highway 72 and from Highway 93 to Indiana Avenue. The City of Broomfield has plans to develop Great Western Office Park on 301 acres. Along the Front Range, Jefferson and Boulder counties have been taking steps to add to their open space purchases as well.

The closest recreational area to the site is Standley Lake, which is approximately five miles away. The lake is used for boating, picnicking, and fishing. It is the primary water supply for the cities of Westminster, Thornton, and Northglenn. Other recreational activities include hiking and biking trails in the surrounding area. The Boulder open space area also has horseback riding trails just northwest of the site.

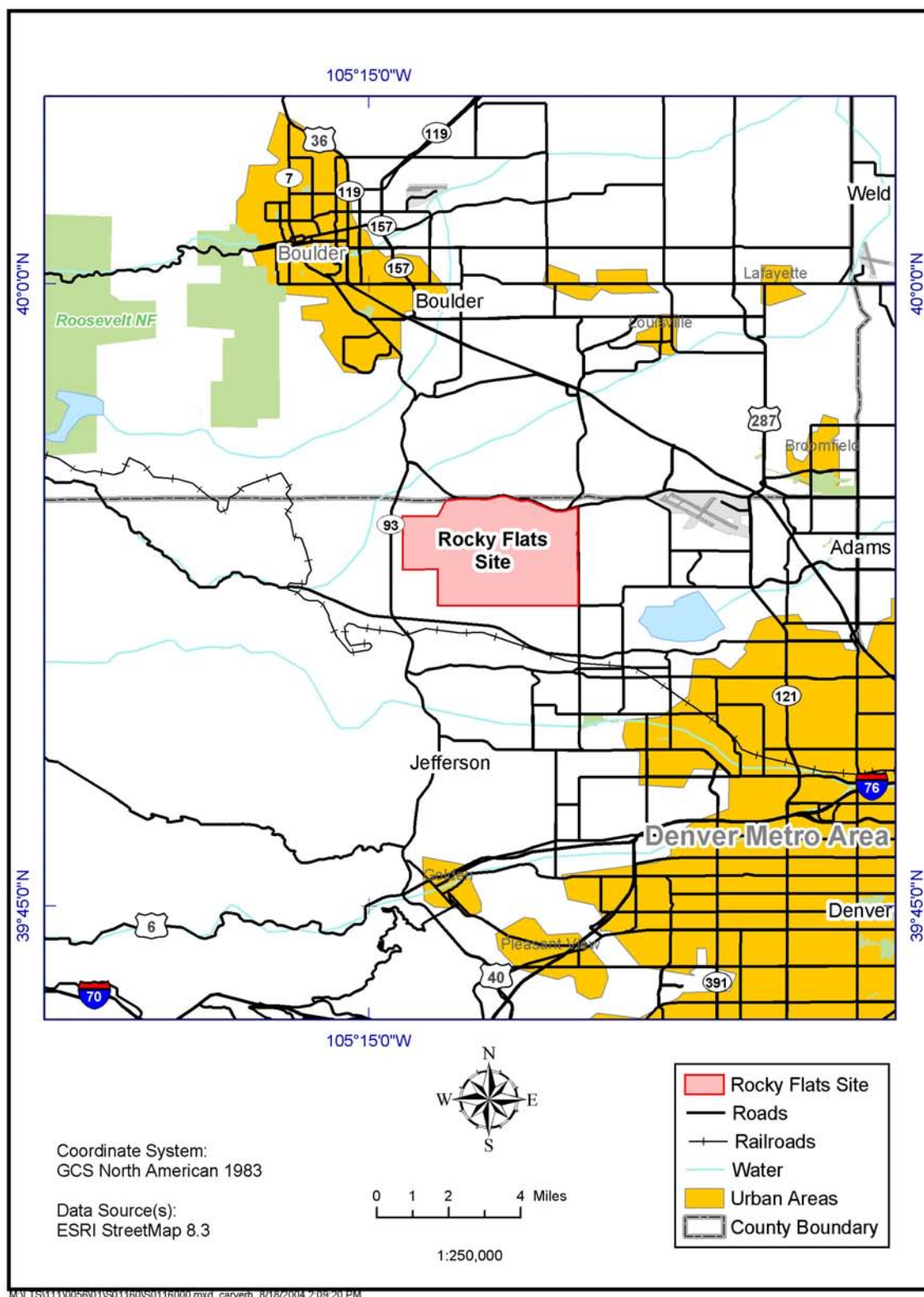


Figure 1. Rocky Flats Site Location Map

## Stakeholders

DOE recognizes that stakeholders may be any affected or interested party, including, but not limited to:

- Rocky Flats Stewardship Council (Local Stakeholder Organization)
- Residents of Boulder County, City and County of Broomfield, Jefferson County, City of Arvada, City of Boulder, City of Golden, City of Northglenn, Town of Superior, and City of Westminster.
- Local governments
- State agencies.
- Elected State of Colorado officials.
- Federal agencies.
- Congressional delegations.
- Local media.
- Local elementary and secondary schools.
- Environmental organizations.
- Business owners.
- Service organizations.
- Retired Rocky Flats workers.
- Other interested individuals.

The Rocky Flats Stewardship Council was formed to comply with the requirements of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005, which included language that specifies the development of Local Stakeholder Organizations (LSOs) at three closure sites, including Rocky Flats. The purpose of the Rocky Flats LSO is to ensure continued public involvement after the CAD/ROD is signed and the site is in long-term operation, monitoring and maintenance. LSOs will provide a formal mechanism for local communities to continue to participate in the public involvement process as it relates to the monitoring and maintenance activities at Rocky Flats. The LSO and DOE will provide for active public participation as defined in this Legacy Management Public Involvement Plan and within the context of the LSO plan.

The Rocky Flats LSO responsibilities will be to:

- 1) Solicit and encourage public participation in appropriate activities relating to the monitoring and maintenance operations of Rocky Flats;
- 2) Disseminate information on the monitoring and maintenance operations of the site to the State of Colorado, neighboring cities and counties, and to persons and entities having a stake in the monitoring and maintenance operations of the site;
- 3) Transmit to appropriate managers or employees of DOE any questions or concerns on the monitoring and maintenance operations of the site from other government entities, or persons and entities referred to above; and
- 4) Perform such other duties as the Secretary of Energy and the LSO jointly determine appropriate to assist the Secretary in meeting the obligations of the Department at the site.

## **Roles and Responsibilities**

LM is responsible for the long-term care of legacy liabilities at former nuclear weapons production sites following completion of cleanup efforts. The primary goals of the office are to:

- Protect human health and the environment through effective and efficient long-term surveillance and maintenance.
- Manage legacy land assets, emphasizing safety, reuse, and disposition.
- Maintain the accelerated actions and final remedy following approval of the CAD/ROD.
- Mitigate community impacts resulting from the cleanup of legacy waste and changing departmental missions.
- Administer retiree benefit plans for former contractor employees.
- Manage site records.

LM is responsible for the management of land retained by DOE and for compliance with the long-term requirements outlined in the RFLMA. Legacy management refers to all activities necessary to ensure protection of human health and the environment following completion of cleanup, disposal, or stabilization at a site or portion of a site and in perpetuity. These activities include maintaining all engineered and institutional controls designed to contain or to prevent exposure to residual contamination and waste; record-keeping activities; inspections to evaluate the condition of surface features; groundwater and surface water monitoring; maintenance of other barriers and contained structures; access control; emergency response; and posting signs.

## **Public Participation**

Public participation is an important part of the CERCLA process. Public participation activities are conducted in support of the DOE goal of actively informing the public about Rocky Flats activities and the preparation of documents to provide opportunities for open, ongoing, two-way communication between DOE and the public.

DOE invites the general public, special interest groups, and local governments to participate early in the discussion of Rocky Flats activities and the decision-making process.

When site conditions warrant entering the consultative process with the regulators as described in the RFLMA, LM will initiate a contact record of discussions between the parties. Communications in the contact record will be made available to the RFSC and other interested stakeholders as early in the process as is practicable following signature approval by the parties. Additional dialogue with the public will also be established as warranted.

The following are general descriptions of LM's public participation activities.

## **Emergency Contacts**

LM has established response mechanisms with local emergency responders in the unlikely event of an emergency at the site. LM will make notifications to established points of contact;

regulators, local elected officials, community officials, and congressional offices would also be informed in a timely manner if such a situation arises. LM will verify at least annually that the emergency contacts are current. The RFLMA and the LM Emergency Management System plan (under development) provide additional details on response actions and contingency planning.

## **Public Meetings**

The establishment of a Rocky Flats LSO (RFSC) will provide the forum for stakeholders to continue a dialogue with DOE. LM plans to coordinate with the RFSC to hold one annual and three quarterly general public meetings during the first two years following LM's Oct. 13, 2005 assumption of responsibility for the monitoring and maintenance of the site to discuss issues of importance to stakeholders. These meetings will provide information about activities being conducted at the site and will present the results of annual site inspections. A portion of each meeting will be dedicated to the LM quarterly and/or annual report of site operation, monitoring and maintenance activities and technical discussion. LM plans to continue briefing elected officials through the RFSC to discuss new data trends or the evaluation of post-CAD/ROD changes. LM will evaluate the need and frequency for future meetings following the initial two-year period. Additional public meetings outside the forum provided by the RFSC may be conducted as warranted. LM welcomes direct communication concerning Rocky Flats at any time by contacting the LM site manager or Rocky Flats public affairs representative (contact information located in Appendix A). Direct communication may include technical discussion and briefings as requested.

## **Internet Website**

LM will maintain a web page at [http://www.lm.doe.gov/land/sites/co/rocky\\_flats/rocky.htm](http://www.lm.doe.gov/land/sites/co/rocky_flats/rocky.htm) for Rocky Flats and will post site documents and make available online key documents associated with the remedy, including the final CAD/ROD, which can also be found at the EPA Region 8 Reading Room. CERCLA documents will be posted on the LM website soon after they are released. DOE designed the Geospatial Environmental Mapping System (GEMS) to provide dynamic mapping and environmental monitoring data display for LM sites. Stakeholders can use GEMS to view a map of a site, photographs, and water-quality and water-level data. Water-quality and water-level data are available in table and graph formats. A GEMS site for Rocky Flats is accessible through a link on the LM Rocky Flats web page.

## **Administrative Record**

In accordance with 40 *U.S. Code of Federal Regulations* (CFR) 300.810 and the RFCA, DOE established and maintains an Administrative Record for Rocky Flats. The Administrative Record includes the documents that formed the basis for the selection of the final action, or remedy, such as guidance documents, evaluations, and data; notices of public comment periods; public comments; decision documents; and enforcement orders. LM plans to maintain the Administrative Record.

An electronic, digitized copy of the Administrative Record is available on the LM Rocky Flats website. Copies of documents contained in the Administrative Record may also be obtained by



responding to a link on the AR webpage or contacting the Rocky Flats public affairs representative (contact information located in Appendix A).

## **Documents for Public Review and Comment**

LM will provide opportunities for stakeholders to review and comment on documents as required by CERCLA regulations, including 5-year reviews. These documents will be posted on the LM Rocky Flats website and collected and maintained in a site file or appropriate Administrative Record. DOE anticipates the number of documents developed to be minimal. The RFLMA explains how DOE will fulfill its operation, monitoring and maintenance obligation at the site. An Annual Report addressing all legacy management activities at Rocky Flats will be posted on the LM website.

## **News Releases and Community Advisories**

LM will issue news releases and/or community advisories regarding LM documents or significant monitoring and maintenance activities. These news releases or advisories will be distributed to news media, the RFSC and other interested stakeholders and will be posted on the LM website.

## **Public Reading Room**

DOE established and maintains a Public Reading Room at the Front Range Community College, College Hill Library, to provide convenient public access to documents and information related to Rocky Flats. The Public Reading Room contains reference items consisting of technical documents, news clippings, videotapes, journal articles, annual reports, environmental restoration, and decontamination and decommissioning decisional documents. Paper copies of some documents in the Administrative Record are also available for public review at the reading room.

Access to the Rocky Flats Reading Room index is available online through the College Hill Library catalog at: <http://catalog.westminster.lib.co.us/ipac20/ipac.jsp?profile=ch#focus>. The reading room address and library hours are as follows:

Front Range Community College  
College Hill Library  
3705 West 112<sup>th</sup> Avenue  
Westminster, CO 80030  
(303) 469-4435

Hours:  
9:00 a.m. – 5:00 p.m. Monday – Thursday  
10:00 a.m. – 5:00 p.m. Friday

LM is currently evaluating options for the future location of the Public Reading Room; by law, DOE must and will make documents available to the public. However, the future location of the

reading room has not been determined. DOE recognizes that the Public Reading Room is an important asset to local stakeholders and will involve them in decisions regarding changes to the reading room.

## **Publications**

LM will prepare fact sheets as needed to describe LM monitoring and maintenance activities. These fact sheets will be posted on the LM Rocky Flats web page.

## **Speakers Bureau**

LM has committed to provide at least one DOE staff person at the site for at least two years following LM's Oct. 13, 2005 assumption of responsibility for the monitoring and maintenance of the site. This on-site staff person, or LM representative, will give presentations on Rocky Flats as requested.

## **Contact Database**

LM maintains a contact database of all stakeholders associated with any LM site.

## **Site Tours**

LM will conduct stakeholder and media tours of Central Operable Unit on a limited basis.

## **Appendix A**

### **Information Contacts**

<i><b>DOE Office of Legacy Management</b></i>	
<p>Scott Surovchak Rocky Flats Site Manager U.S. Department of Energy Office of Legacy Management 11025 Dover St., Suite 1000 Westminster, CO 80021 (720) 377-9682 Email: <a href="mailto:scott.surovchak@lm.doe.gov">scott.surovchak@lm.doe.gov</a></p>	<p>Bob Darr Rocky Flats Public Affairs S.M. Stoller Corporation 11025 Dover St., Suite 1000 Westminster, CO 80021 (720) 377-9672 Email: <a href="mailto:bob.darr@lm.doe.gov">bob.darr@lm.doe.gov</a></p>
<i><b>U.S. Environmental Protection Agency</b></i>	
<p>Mark Aguilar Rocky Flats Project Manager U.S. Environmental Protection Agency Region 8 1595 Wynkoop Denver, CO 80202-1129 (303) 312-6251 Email: <a href="mailto:aguilar.mark@epa.gov">aguilar.mark@epa.gov</a></p> <p>Max Dodson Assistant Regional Administrator U.S. Environmental Protection Agency Region 8 1595 Wynkoop Denver, CO 80202-1129 (303) 312-6251 Email: <a href="mailto:dodson.max@epa.gov">dodson.max@epa.gov</a></p>	<p>Rob Henneke Community Involvement Coordinator U.S. Environmental Protection Agency Region 8 1595 Wynkoop Denver, CO 80202-1129 (303) 312-6734 Email: <a href="mailto:henneke.rob@epa.gov">henneke.rob@epa.gov</a></p>

<b><i>Colorado Department of Public Health &amp; Environment</i></b>	
<p>Carl Spreng Rocky Flats Hazardous Waste Program Manager Colorado Department of Public Health &amp; Environment 4300 Cherry Creek Drive South Denver, CO 80246-1530 (303) 692-3358 Email: <a href="mailto:carl.spreng@state.co.us">carl.spreng@state.co.us</a></p> <p>Marion M. Galant Community Involvement Specialist Colorado Dept. of Public Health &amp; Environment 4300 Cherry Creek Drive South Denver, CO 80246-1530 (303) 692-3304 Email: <a href="mailto:marion.galant@state.co.us">marion.galant@state.co.us</a></p>	<p>David Kruchek Rocky Flats Program Liaison Colorado Department of Public Health &amp; Environment 4300 Cherry Creek Drive South Denver, CO 80246-1530 (303) 692-3328 Email: <a href="mailto:david.kruchek@state.co.us">david.kruchek@state.co.us</a></p>
<b><i>U.S. Fish and Wildlife Service</i></b>	
<p>Dean Rundle Refuge Manager U.S. Fish and Wildlife Service Rocky Mountain Arsenal, Building 111 Commerce City, CO 80022 (303) 289-0350 Email: <a href="mailto:dean_rundle@fws.gov">dean_rundle@fws.gov</a></p>	<p>Amy Thornburg Refuge Operations Specialist U.S. Fish and Wildlife Service Rocky Mountain Arsenal, Building 120 Commerce City, CO 80022 (303) 289-00905 Email: <a href="mailto:amy_thornburg@fws.gov">amy_thornburg@fws.gov</a></p>
<b><i>Rocky Flats Stewardship Council (LSO)</i></b>	
<p>David Abelson Executive Director Rocky Flats Stewardship Council P.O. Box 17670 Boulder, CO 80308-0670 303-412-1200 Email: <a href="mailto:dabelson@rockyflatssc.org">dabelson@rockyflatssc.org</a></p>	

## **Appendix 3**

### **List of Addresses**

# ***DRAFT ROCKY FLATS LEGACY MANAGEMENT AGREEMENT***

## ***Appendix 3 List of Addresses***

### ***DOE Office of Legacy Management***

U.S. Department of Energy  
Office of Legacy Management  
11025 Dover St., Suite 1000  
Westminster, CO 80021

### ***U.S. Environmental Protection Agency***

U.S. Environmental Protection Agency  
Region 8  
1595 Wynkoop  
Denver, CO 80202-1129

### ***Colorado Department of Public Health & Environment***

Colorado Department of Public Health & Environment  
4300 Cherry Creek Drive South  
Denver, CO 80246-1530